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**GOVERNMENT EXPENDITURE AND UNEMPLOYMENT: EMPIRICAL  
INVESTIGATION OF SUB-SAHARAN AFRICAN (SSA) COUNTRIES**

Grace Ayiwah Fosu

Eastern Illinois University

2019

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## **Abstract**

Over the years, there have been increasing trends in government expenditures in most countries in Sub-Saharan Africa, but some of the social-economic indicators such as health, unemployment, education, inflation, and the others paint a blurry image of the effect of the rising public spending. It is worrisome to see that pictures painted by the economic indicators show that budgets made by governments in Sub-Saharan Africa look good on paper than their actual effect in the economy (Andrews, 2010; Peterson, 2010). As a result of this, the question that keeps emerging is that “does government spending actually impact economic indicators in the region”? Unemployment remains one of the most challenging socio-economic problems of almost all the countries in Sub-Saharan Africa. With the consistent rise in unemployment situations in Sub-Saharan Africa, this study attempts to find the relationship between public spending and unemployment. To examine whether the increasing public expenditures reduce unemployment, increase unemployment or have nothing to do with unemployment, the study investigates the impact of government expenditure on unemployment in 34 Sub-Saharan African countries for the period 1990 to 2017. The study further disaggregates government expenditure into two categories; government investment expenditure and government consumption expenditure.

Utilizing the panel data estimation technique on annual series data, the pooled OLS, the fixed effect, and random effect models are employed to examine the relationship between government expenditure and unemployment in the selected SSA countries. Based on the fixed effect model selected with the aid of the Hausman test, both government consumption expenditure and government investment expenditure were found to have an effect on unemployment in the SSA countries. The findings of the study revealed that an

increase in government consumption expenditures results in an increase in unemployment whereas a rise in government investment expenditures results in a reduction in unemployment, holding all other variables constant. In other words, government investment expenditure creates more employment in Sub-Saharan Africa. Foreign direct investment (FDI) was also found to increase employment in the SSA region. The study recommended that governments in the region focus more on investment expenditures which have a greater tendency of creating employment for the people than the consumption expenditures.

## **Dedication**

This thesis is dedicated to the memory of my beloved father, Mr. Joseph Yaw Fosu, a great and gentle soul who taught me to believe in God, dedicate to hard work and be persistent in perseverance. Wherever you are, I still love you, Papa.

## **Acknowledgments**

First and foremost, I am most grateful to God almighty for His unending love, guidance, and protection throughout my life.

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To my lovely mother, Mad. Grace Ayiwah Snr, I want to give a very special thank you for her love and her supporting me with immense prayers. And also, many thanks to my siblings, Yaw, Adu, Adwoa and Emma for their love and encouragement.

I would also like to thank the Parrish family especially Ms. Patsy Parrish for playing the role of a mother and supporting me throughout my years at Eastern Illinois University. My final thanks go to all my colleagues who encouraged me throughout my study and made my stay on EIU campus a memorable one.

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## **CHAPTER ONE**

### **INTRODUCTION**

#### **1.1 Background of Study**

The role of the government in an economy has been a germane debate over the years in the world's growing economies. While some believe a larger role by the government is more efficient for economic growth, others believe otherwise. In as much as the debate keeps spinning, we cannot ignore the fact that governments still have roles to play in an economy. Governments develop policies to react to certain economic conditions and these policies and regulations are usually geared towards economic growth or prevent negative economic consequences.

Fiscal policy among many other policies is one policy framework used by governments to regulate their spending and taxation. Governments of both developed and developing countries adopt the framework of fiscal policy as a means to adjust their spending levels and tax rates to monitor and influence their countries' economies. Fiscal policy, thus, is a management tool of a government with respect to the country's economy (Anayochukwu, 2012). More importantly, two major goals of fiscal policy are to reduce unemployment and encourage economic growth.

The emergence of Keynesian concepts has induced governments to assume essential roles in the administration of countries which may include the various direct government investments in all sectors of an economy. When the government increases its spending, for instance when there are high government funds on new public work programs like building infrastructures such as bridges, roads or train systems, it tends to create jobs

that reduce unemployment and increases disposable income leading to high levels of consumption. When disposable income increases, consumers demand more goods and services which go a long way to boost businesses since the level of production will rise in order to meet the high demand of consumers. As the level of production increases, more people are employed. Taxation, on the other hand, is another way a government can use to reduce unemployment; tax cuts increase disposable income and enables business expansion and hiring. Tax hikes put less money into consumers' hands which tends to decrease consumption.

Baker (2007), stipulated that despite government involvement in shaping the economy of a country using fiscal policy, a high incidence of unemployment still occur. The recent high rates of unemployment encountered by many economies reflect both cyclical conditions and deep-rooted frailties in labor market institutions and fiscal policies (Cottarelli, 2012). Unemployment impacts negatively on the government's ability to generate income, and it also reduces economic activity (Kelechukwu and Amadi (2016). Enormous amount of government revenue is generated from taxes of all forms, and so if fewer people are employed, then the government's revenue that could be used to boost economic activities decreases because fewer people would be paying taxes (especially income-related taxes and all other forms of taxes that could be generated when labor force is employed). Since the employment of available human resources is vital to economic growth, it is thus, the aim of every government to implement policies that would reduce unemployment rates. Mostly, the creation of jobs from governments occurs via government spending in the provision of social and economic infrastructural amenities. These are generally referred to as government investment expenditure.

Issues on fiscal policy especially government spending and its implications on key macroeconomic indicators including unemployment has been one of the most pertinent debatable topics for the past years. Both academicians and policymakers have developed a keen interest in the issues of fiscal policy and its effects on key macroeconomic indicators. This has resulted in copious research works on the topic. Most often, plentiful studies are geared towards the impact of fiscal policy on the general economic growth of countries. Surprisingly, there seems to be a limited number of researches on the effects of fiscal policy on unemployment, and what makes it interesting is the lack of consensus in the limited literature and empirical analysis of the fiscal policy and unemployment nexus.

With respect to fiscal policy and its influence on the unemployment rate, a lot of questions have been raised including: Does the policy mitigate unemployment? What are some of the consequences of fiscal policies in its application to reduce unemployment? Despite the increasing trend in government expenditures in Sub-Saharan Africa, it is quite contradictory and bothersome to pinpoint that social-economic indicators have painted dull pictures of the situation (Nwosa, 2014). Fiscal policy implementation in Sub Saharan Africa happens to be predominantly challenging. Budgets created by governments of the countries in this region are known to appear great on paper but unrealistic in practice (Andrews, 2010; Peterson, 2010).

Taking a look at fiscal policy employed by the governments of some of the countries in the region, the South African government has been using an expansionary fiscal policy framework over the years. For several years up until 2010, expansionary fiscal policy dominated which consistently pushed the government to encourage national budget deficits (Treasury, 2009). South Africa's budget deficit as a percentage of GDP

skyrocketed from about 1.3 percent in 1980 to about 4.8 percent in 2010, averaging about 2.8 percent for the period 1980 to 2010 (DTI, 2011). Regardless of the government's immense struggle to influence the economy via an expansionary fiscal policy framework, unemployment remains one of the most challenging issues in South Africa.

Interestingly, the Nigerian government also in some time past, has employed several fiscal policies to curb the increasing rate of unemployment but to no avail (Egbulonu and Amadi, 2016). In spite of the impressive nature of the economic growth rate from the years 2000 to 2011 (an average of 6.4 percent); unemployment in Nigeria has been rising from 1.8 percent in 1995 to 23.9 percent in 2011 (CBN annual report).

During the period of the 2007-2008 global financial crisis, the expansionary fiscal policy framework became a popular policy practice by most developed nations and some of these countries experienced higher unemployment rates during that period of the crisis (Umut, 2015). Undoubtedly, the effects of government spending on unemployment still remain vague; there exists some empirical evidence which shows that fiscal stimulus improves employment (see Monacelli et al., 2010) while others provide a contrasting view in their research that fiscal stimulus rather worsens unemployment (Bruckner and Pappa, 2012).

## **1.2 Statement of Problem**

Unemployment is one of the biggest social and economic menace which has been haunting Sub-Saharan African economies over the years. It persistently hampers economic growth and reduces the standard of living in this region. Unemployment in the region rose to 7.2% in 2008 which was above the global unemployment rate of 5.5% (ILO, 2018). With a strongly growing labor force coupled with limited improvement in the labor market, the region has the highest rate of vulnerable employment globally, staging about 66%.

Governments in Sub-Saharan Africa region have adopted various fiscal policy measures to regulate their economies in which these policies are directed towards reducing unemployment, but the problem does not seem to be solved.

### **1.3 Objective of the Research**

This research is intended to investigate the effects of government expenditures on unemployment in Sub-Saharan Africa by disaggregating the government expenditures into recurrent expenditure (government consumption expenditure) and capital expenditure (government investment expenditure). This division is incorporated to dive into which of the two has a relevant impact on unemployment, and the direction of the impact whether positive or negative. Moreover, the study will analyze the trends in the two forms of government expenditure, and unemployment in the region.

### **1.4 Research Hypothesis**

The study seeks to empirically test the following hypothesis based on the research objective stated:

**H<sub>0</sub>:** Government expenditure has no effects on unemployment in Sub-Saharan Africa.

**H<sub>1</sub>:** Government expenditure has an effect on unemployment in Sub-Saharan Africa.

## **1.5 Justification of the Study**

For several decades, most of the theoretical and empirical studies have focused extensively on government expenditure and economic growth in general. However, there seem to exist limited studies on the relationship between government spending and the labor market, especially in Africa. Moreover, most of the studies on government spending and other macroeconomic indicators incorporate the aggregated government expenditure, and so the differences in the effects of the various types of government expenditures are not fully exposed. This study stands to differ and add to the limited studies on government spending and unemployment, and also adopt the disaggregated forms of government expenditure to disclose the full effects of the various types of government spending on unemployment in Sub-Saharan Africa.

## **1.6 Organization of the Study**

The study will be sectioned into six chapters, and it is organized as follows. Chapter one presents the introduction of the study followed by chapter two which presents extensive literature both theoretical and empirical. The background information on the trends in government expenditure and unemployment are presented in chapter three. The methodology employed, and the data used are described in chapter four and chapter five discusses the empirical results from the data analysis. Finally, chapter six concludes the main findings of the research with some policy recommendations.



## **CHAPTER TWO**

### **LITERATURE REVIEW**

#### **2.0 Introduction**

This chapter focuses on the review of relevant literature on government expenditure and its relationship with other key macroeconomic indicators in different countries. The chapter consists of two broad sections. The first section reviews the theoretical literature on fiscal policy with an emphasis on government expenditure and its impact on key macroeconomic indicators. Section two is a review of empirical studies on the fiscal policy tool, government expenditure and its effect on unemployment and some other quintessential indicators in the economies of different countries.

#### **2.1 Theoretical review**

There have been numerous studies on the relationship between government expenditure and other key macroeconomic indicators in different countries. Due to differences in methods and data used, these studies come up with diverse outcomes and conclusions. For years now, limited but diverse research works have been conducted on developed, emerging and developing countries in regard to finding the effects fiscal policy especially government expenditure imposes on unemployment. The theoretical reviews are mostly connected with the Keynesian theory, Real Business Cycle (RBC), Okun's Law and Wagner's Law. Thus, this research would seek to explore these theories and concepts related to both unemployment and government expenditure as a fiscal policy tool. Before

then, the study explores separate and concise reviews on unemployment and government expenditure as a fiscal policy mechanism.

### **2.1.1 Unemployment**

Unemployment remains a major issue across the globe. Economies have been battling with the problem of unemployment for decades, and they have tried with various policy frameworks to curb this socio-economic problem. There are various interpretations of the definition of unemployment which allow us to have a better understanding of the status of the labor market. Generally, unemployment is a phenomenon that occurs when a person who is actively searching for employment is unable to find work.<sup>1</sup> It is mostly measured in terms of the unemployment rate, which is the number of unemployed individuals divided by all individuals currently in the labor force. Unemployment is often used to measure the health of an economy.

Economically, unemployment represents a loss in a country's Gross Domestic Product (GDP). It impacts negatively on the government's ability to generate income, and it also reduces economic activity. Economists study unemployment to find its causes and thus, suggest public policy frameworks that would help improve employment levels. There remains considerable theoretical debate regarding the causes, consequences, and solutions for unemployment. Economic literature provides many explanations for the unemployment problem. Some theories blame the economic systems, and others blame the unemployed workers. Still, other theories shift the problem to external sources and shock, or

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<sup>1</sup> <https://www.investopedia.com/terms/u/unemployment.asp>

unpredictable events, and others argue that technology and labor market institutions are the causes of the unemployment problem. (Mouhammed 2012).

### **2.1.2 Theories on Unemployment**

There are various schools of economic thought that differ on the causes, consequences, and solutions of unemployment. This has resulted in various theories including the classical theory of unemployment, Keynesian theory of unemployment and Marxist theory of unemployment. There are other theories from the Austrian School of economics, neoclassical economics and the new classical economics (builds analysis on a neoclassical framework). The most popular among these are the classical theory and the Keynes theory.

According to the classical economic theory, originally developed by Adam Smith, David Ricardo, and others in the late 18<sup>th</sup> century, unemployment is explained simply by the real wages being higher than the market-equilibrium wage.<sup>2</sup> Unemployment is perceived as a sign that smooth labor market functioning is being impeded in some way. The Classical approach assumes that markets behave in response to the idealized supply-demand model. In view of the Classical theory, an economy will achieve full employment (natural rate of employment) if wages and prices are flexible. This implies that unemployment occurs when wages rise too high to maintain equilibrium. When wages rise, firms cannot pay as many workers so they may not be able to maintain more workers and may lay some off which would tend to increase unemployment. In this regard, there would be fewer people with an income to demand goods and services, so demand would fall, and

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<sup>2</sup> [https://en.wiktionary.org/wiki/classical\\_unemployment](https://en.wiktionary.org/wiki/classical_unemployment)

prices tend to go down as well. Since unemployment goes up, there would be more people in search of jobs thereby giving firms a wider range of choices in the number of people to hire and how much they would pay for such labor. The classical view claims that the unemployment rate will always go through cycles, but in the end, it will always correct itself to the natural unemployment rate.

Economist John Maynard Keynes (1883-1946) changed the world's view of the workings of the economy with his book "The Theory of Employment, Interest, and Money" (1936). Keynes introduced the theory that aggregate demand determines the equilibrium. Keynes's theory suggested that the level of employment in the short run is dependent on aggregate effective demand for goods and services. The principle of effective demand is a major point related to Keynes's theory of employment. Aggregate demand is the number of goods and services all buyers demand at various prices (Sayer and Morris 170). According to Keynes, when the demand for goods and services in an economy increases, firms are encouraged to produce more. The total level of employment of a country can be determined by the total demand of the country. Therefore, when aggregate effective demand increases, the level of employment would increase and vice-versa. Classical theorists viewed the economy in terms of reduced prices and wages whereas Keynes saw the economy in terms of fall in production.

Keynes's theory criticized the perceptions of classical economists that the forces of the market in the capitalist economy would adjust themselves to reach equilibrium. Classical theorists believed the principle of "Laissez Faire", that government should not intervene but allow the economy to resolve itself because the economy goes through business cycles. Keynes's book which was published after the Great Depression succeeded

in criticizing the classical theory of employment since the great depression proved that market forces could not by themselves attain equilibrium but needed an external intervention for support. Keynes believed that government interference is useful to an economy. His models recommend government interventions designed to increase demand for labor. The theory suggests fiscal and monetary policies, in that the use of government spending can reduce the business cycle which can increase demand for goods and services and also raise the level of consumption in an economy. When there is an increase in demand firms would increase their level of production and thus would hire more people.

The Marxist theory of unemployment shares the Keynesian viewpoint of the relationship between economic demand and employment, but cautions that the market system's propensity to slash wages and reduce labor participation on an enterprise-level causes a requisite decrease in aggregate demand in the economy as a whole, causing crises of unemployment and periods of low economic activity before the capital accumulation (investment) phase of economic growth can continue.<sup>3</sup> According to Karl Marx, unemployment is inherent within the unstable capitalist system and periodic crises of mass unemployment are to be expected.

According to Marx, in his book "Manifesto of the communist party" the only way to permanently eliminate unemployment would be to abolish capitalism and the system of forced competition for wages and then shift to a socialist or communist economic system. For modern Marxists, the existence of persistent unemployment is proof of the inability of capitalism to ensure full employment.

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<sup>3</sup> <https://en.wikipedia.org/wiki/Unemployment>

The Austrian School of economics and the new classical economics also share a viewpoint with classical economics and believe that market forces are reliable means of finding solutions to unemployment. These schools of thought argue against interventions imposed on the labor market from the outside. Some interventions such as unionization and bureaucratic work rules.

## **2.2 Fiscal Policy**

Fiscal policy evolved out of the “Great Depression” when the laissez-faire system of economic management ended, and government intervention became the means of influencing macroeconomic variables.<sup>4</sup> It is based on the theories of the British economist, John Maynard Keynes (1883-1946), also known as Keynes economics, this theory basically states that governments can influence macroeconomic productivity levels by increasing or decreasing government spending and tax levels.<sup>5</sup> The composition and variations in the level of taxation and government expenditure can influence the macroeconomic variables, among which include aggregate demand, saving and investment, allocation of resources and income distribution. In an open economy, fiscal policy influences the exchange rate and trade balance of the economy.

### **2.2.1 Stances of Fiscal policy**

The state of an economy may determine the economic goals of fiscal policy. Fiscal policy may be geared towards constraining economic growth by regulating inflation or, in reverse, stimulate economic growth by reducing taxes, enhancing spending activities that

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<sup>4</sup> [https://en.wikipedia.org/wiki/Fiscal\\_policy](https://en.wikipedia.org/wiki/Fiscal_policy)

<sup>5</sup> <https://www.investopedia.com/articles/04/051904.asp>

will propel economic growth and facilitate borrowing and spending. The three perspectives of fiscal policy are:

(i) Expansionary fiscal policy: This is the form of fiscal policy that involves the lowering of taxes, increasing government spending or both, in order to combat recessionary pressures. This is mostly used by governments when trying to stabilize the contraction phase in the business cycle. Some typical examples of expansionary fiscal policy programs comprise increased government expenditure on public activities (such as roads and bridges construction, building schools) and granting tax cuts to the residents of the economy in order to stimulate their purchasing power so as to be able to control a decrease in aggregate demand.

(ii) Contractionary fiscal policy: The type of fiscal policy that embraces governments increasing taxes and decreasing spending or both in order to combat inflationary pressures. It mostly occurs when government deficit expenditure is lower than normal, and this has the capacity to slacken economic growth if inflation caused by a substantial increase in aggregate demand and money supply gets higher. Thus, contractionary fiscal policy measures are adopted when growth is untenable which results in inflation, recession, high prices of investment unemployment above the “acceptable” level of 3 percent to 4 percent.<sup>6</sup>

(iii) Neutral fiscal policy: This measure of fiscal policy is embarked on when an economy is neither in a recession nor a boom. There is no change in the amount of government deficit spending over the average period of time. Thus, there

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<sup>6</sup> [https://en.wikipedia.org/wiki/Fiscal\\_policy](https://en.wikipedia.org/wiki/Fiscal_policy)

is no impact from such a level of spending since there is no variation in government spending.

### **2.2.2 Fiscal policies and fiscal adjustments**

The literature on the determinants of fiscal policy both theoretical and empirical has been extensively studied over the years. Over the last century, one pivotal debate among economists and politicians as to whether or not government intervention in an economy using the available monetary or fiscal policies is significant for economic development has provided different schools of thought on the role of fiscal policy in an economy. One school of thought believes that exogenous shocks in the economy, primarily on the supply side via technological changes cause the rise of economic fluctuations. On the other hand, others think that imprudent monetary policies but not government interventions in the economy cause shocks in aggregate demand.

Neo-classical and monetarist economists stand by their argument that the market will solve the changes in the economy by itself, thus disregarding the efficiency of policy instruments. With rational expectations taken into the picture, they opine that private activities will equipose any governmental interventions in the system in the medium run. Using the assumptions based on the Phillips curve which relates inflation and unemployment, they make the assertion that any efforts by the government to fuel the economy, will result in a rise in price levels which will yield no results or worsen the economic situation. They propose that if obstructions of full market operations are be rid of, then the actual output will tend to potential output, and the economy will gradually attain its natural rate of employment.



Meanwhile, the other school of thought of economists believes that economic wavering is fundamental to the capitalist system and replicate the usual process of the investment production cycle (Mulas-Granados, 2004). This group of economists with Keynesian economists sustain their thoughts on the grounds of insufficient aggregate demand causing economic slackness and believe government interventions can stimulate economic growth. They do not agree with the neoclassical assumption of the market absorbing and responding to shocks by itself without any interventions. For this group of economists, even if the operations of markets are perfectly efficient, governments still have significant roles to play in influencing the decisions of consumers and firms through tax policies, welfare expenditure, investment credits and provision of public goods.

Even at the point where rational expectations are taken into account, some government activities can induce a substantial influence on the economy since wages and prices are not as flexible as the neo-classical economist assert. These inflexibilities result in failures in the market which government activities can provide solutions to. Government policies may be embarked upon to influence market systems to fix some market imbalances in certain key sectors of the economy, or more significantly in income distribution (Mulas-Granados, 2004).

### **2.3 Empirical review**

Considering the large empirical literature on the impact of monetary policy, fiscal policy gained less attention in economic research until a few years back. This low attention was at odds with the fact that numerous key public debates on the role of fiscal policy were functioned on arguments occasioning the macroeconomic relevance of government

expenditure and taxation. At last, the dynamic effects of discretionary fiscal policy on macroeconomic indicators, an archetypal subject in the large macro-econometric models of the 1960s and 1970s has over the years been revived within the framework of vector autoregressions in the work of Blanchard and Perotti (1999).

In recent years, there have been substantial studies on the relationship between government expenditure and other key macroeconomic variables in different countries. But there seems to be a limited study on government spending and unemployment nexus in Africa. And there exists some degree of ambiguity in the outcomes of the empirical studies which can be attributed to differences in methodologies, modeling analysis, and data standardizations, these studies come up with diverse and mixed conclusions.

Holden and Sparrman (2016) investigated the effects of government purchases on unemployment using panel data on 20 OECD countries spanning from 1980 to 2007. Seeking to understand the impact of government purchases on unemployment in these countries, they analyzed other factors such as labor market institutions, exchange rate regimes and economic booms and downturns, and how they contribute to the measure of the effect. According to their estimation, unemployment is reduced by about 0.3 percentage points as a result of an increase in government purchases equal to 1 percent of GDP. They propounded that the size of the effect is highly dependent on other factors in the economy. The study found the effect to be greater and more persistent in countries with labor market institutions that are less conducive to employment. Again, the study uncovered a strong effect of fiscal policy on unemployment in countries with a fixed exchange rate and a weaker impact under a floating exchange rate regime. The impact was observed to be greater in recessions than in booms.

Analyzing fiscal policies, institutions, and unemployment in the past decades, Bassani and Duval (2006) examined and estimated a standard model of institutional determinants of unemployment in OECD countries. They estimated a reduced-form unemployment equation using cross-country/time-series data for 21 OECD countries from the years 1982-2003. Their results concluded that for the average OECD country, high and durable unemployment benefits, high tax wedges and severe anti-competitive product market regulation (PMR) increase unemployment. On the other hand, the study observed that highly integrated and or centralized wage bargaining structures appear to dampen it. Presenting an extensive sensitivity estimation results of a robust model specification, sample estimation choice, and estimation technique, the authors alerted that their inferences be viewed solely on the average OECD country.

In their working paper for the IMF, Bova, et al., (2015) studied the impact of fiscal policy on employment via the Okun's Law view. Exploring a panel data on OECD countries over the past thirty years, the study findings exposed fiscal policy in these countries to impact employment beyond the conventional effect it is presumed to pose via the output multiplier. Specifically, this effect is revealed to be working effectively for a number of items of recent discretionary expenditure and for corporate income taxes and social security contributions. In almost all of the model specifications, Okun's Law is discovered to be steady, but increasing expenditure on subsidies and lower social security contributions can intensify the effect output gap exerts on employment gaps.

Using quarterly data on GDP, private consumption, private investment, government consumption expenditures, wages, short-term interest rate, labor force participation rate, employment and unemployment rate from OECD countries, Pappa (2011) sought to

theoretically and empirically investigate fiscal expansions, unemployment and labor force participation in OECD countries using a Structural Vector Autoregressive (SVAR) modelling. The research findings pointed out that for a number of OECD countries, labor force participation, employment, and unemployment rate increases significantly following a rise in government expenditure under a mixture of specifications and identification structures. Also, fiscal expansions lean towards a rise in real wages. Following that previous models have encountered complications in coming up with such outcomes, the study explained that empirical regularities can be recreated with two addenda into the conventional New Keynesian model with corresponding frictions that is, a labor force participation choice and workers' heterogeneity.

In the same OECD context, Wang and Abrams (2011) in their working paper investigated the effect of government size on the steady-state unemployment rate from a dynamic perspective. The study employed a panel error-correction modeling technique to examine both the short-run dynamics and the long run estimation of the unemployment rate. Using panel data on twenty OECD countries spanning from 1970 to 1999 and controlling for simultaneity bias, the results of the study suggested that the size of government measured as total government outlays as a percent of GDP, significantly affect the steady-state unemployment rate. Specifically, when government spending is partitioned into various categories, transfers and subsidies are discovered to exert a significant effect on the steady-state unemployment rate whereas government purchases of goods and services have no significant effect on the steady-state unemployment rate.

Seeking to explore the unemployment effects of fiscal policy in Netherlands, Unal (2015) made use of a Vector Autoregressive (VAR) analysis with the identification scheme

of Blanchard and Perotti (2002) on a quarterly data covering the period 1960:1 to 2007:3 on unemployment rate and the fiscal variables government spending, net tax, social security tax and the control variables. The findings of the study revealed that unemployment increases following a fiscal shriveling while fiscal expansion causes a fall in unemployment. There was also an indication from the results that a social security tax initiative exerts a positive impact on unemployment, that is it causes a rise in the unemployment rate. Furthermore, the study discovered that a social security tax innovation is a more efficient scheme as compared to total net tax policies in the Netherlands in terms of GDP and its private factors. In total, the study investigations reveal that the Netherlands economy possesses the features of Keynesian theory in the view that a rise in government spending and taxes exert opposing effects on investment.

In his article, Tagkalakis (2013) studied the unemployment effects of fiscal policy in Greece utilizing an SVAR methodology based on Blanchard and Perotti (2002) SVAR methodology. Incorporating a quarterly data on Greece spanning from 2000 to 2012, and using a parsimonious specification due to sample size, the variables examined were real government spending, real net taxes, real GDP and unemployment as the dependent variable. The study observed that unemployment and growth impacts can be fairly sizeable in the situation of cuts in government purchases, in particular, government consumption and to lower the extent of government investment. Thus, the findings indicated that an increase (cut) in government purchases and its subcomponents such as government consumption expenditure, government wage bill, and government investment reduce (increase) unemployment and unemployment rate. Conversely, an increase in taxes reduces output and increase unemployment, especially those leading to higher implicit direct and

indirect tax rates. The study further remarked that the impact of fiscal policy shocks on output and unemployment is more sizeable when taking into account recent year improvements. Both unemployment and output respond in a highly consistent way as compared to pre-crisis years.

Monacelli et al. (2010) examined the effect of fiscal policy on the US labor market by employing the VAR estimation. Identifying government shocks on the basis of the approach of Blanchard and Perotti (2002), they observed that an increase in government spending of 1 percent of GDP generates about 1.2 percent output (at one year) and 0.6 percentage points in unemployment multipliers (at the peak). Whereby each percentage point increase in GDP results in a rise in employment of approximately 1.3 million jobs. They also found that total hours, employment and job finding probability all rise while the separation rate falls.

Mountford and Uhlig (2009) proposed and applied a new approach for analyzing the impacts of fiscal policy in the US economy using vector autoregressions. In particular, the paper employed sign restrictions to detect a government revenue shock as well as a government spending shock, while regulating a generic business cycle shock and a monetary policy shock. The vector autoregressions methods were applied to US quarterly data from 1955 to 2000. The study plainly made allowance for the likelihood of announcement effects, that is, that a present fiscal policy shock changes fiscal policy variables in the future, but not at present. Creating the impulse responses to three linear amalgamation of these fiscal shocks, and paralleling to the three settings of deficit-spending, deficit-financed tax cuts and a balanced budget spending expansion, the study discovered that deficit-financed tax cuts work profoundly well among these three

situations to enhance GDP, with a maximum present value multiplier of five dollars of total surplus GDP per each dollar of the total cut in government revenue five years after the shock.

Pappa (2009) attempted to examine the effects fiscal shocks pose on employment and the real wage. Studying the transmission of fiscal shocks in the US labor market, the paper utilized a Structural Vector Autoregressive (SVAR) modeling technique and a base identification on the constrictions that shock to government consumption, employment, and investment must advance output and deficits. Characterising on a set of conventional robust theoretical restrictions on the impact of fiscal shocks on output and the deficit generated by standard Real Business Cycle (RBC) and New Keynesian models to detect fiscal disruptions, as well as exploring the dynamics they exert on real wages and employment, the study revealed that real wages and employment concurrently rise significantly following government consumption and investment shocks. This effect of the shocks occurs both in the aggregate and for most of the states in the US that were investigated. Meanwhile, the aggregate rise in government employment increases the real wage and total employment; in one-third of the states, the latter falls.

In the same United States, Mahdavis and Alanis (2013) re-examined the relationship between unemployment and government expenditure in a panel of 50 US States and Local Governments (SLGs). To present new pre-recession empirical evidence that places the expectations on the impact of the federal relief to SLGs in a wider view, the study covered the period from 1977 to 2006. The study findings revealed that per capita real public spending (total and capital, assistance and subsidies, wages and salaries, and social insurance categories) was a factor of a cointegrating relationship with the

unemployment rate and real per capita state personal income. Exempting social insurance, other spending variables, when statistically significant, exhibited a depressing impact on the unemployment rate. Again, the weight of this impact, however, was small in general. The most sensitive effect on the unemployment rate was increased in wages and salaries.

Moreover, the analysis of a long- term causality centered on panel error-correction coefficients showed a steady proof of a causal effect from spending to the unemployment rate, but less consistent evidence of such impact in a contrasting direction. However, social insurance was revealed as a driving factor for the unemployment rate. Further, the findings of the research exposed the size of the error-correction coefficients to slacken the response of the unemployment rate to digressions from the cointegrating relationship. Meanwhile, the marginal impact spending induces on the unemployment rate increased with the amount of the federal grants received. The study in total proposed that public spending may not serve as a fast solution in relation to the unemployment rate, but the results seemed to support the distribution of the federal funds to wage and salaries and assistance and subsidies, but not to capital and social insurance expenditures to the lower unemployment rate.

Employing a structural vector autoregression model (SVAR) to extrapolate the causal response of fiscal policy to macroeconomic conditions, Huidrom et al.,(2018) investigated the challenges of fiscal policy in emerging and developing countries. They presented an extensive and systematic analysis of the availability of fiscal policy and the utilization of fiscal space in emerging and developing economies by specifically using an event study to evaluate fiscal space and policy during economic contraction events. The study covered 196 countries and incorporated two broad categories of the dataset; annual



data ranging from 1980 to 2016 and a quarterly data with maximum coverage from 1980Q1 to 2014Q1 specifically used for estimating the SVAR model. Tracking the evolution of fiscal space policy measures, they analyzed the dynamics of fiscal space and policy during economic contractions, with the experience of the great recession and other previous episodes of contractions being a point of comparison. The findings of the study showed that emerging and developing economies fostered fiscal space in the transition to the great recession of 2008-2009 which was later utilized and helpful for stimulus. Afterward, fiscal space has declined and remains dwindling as these economies historically have benefited from low-interest rates. Again, they discovered that fiscal policy in emerging and developing countries turned out to be countercyclical, and it has been advancing since the 1980s, and the cause can be attributed to several factors such as policies and institutions improvements and enhanced financial markets.

In the African context, Murwirapachena et al. (2013) investigated the effects of fiscal policy on unemployment in South Africa using a vector autoregression (VAR) model on an annual time series data from 1980 to 2010 that involved the variables; government spending, government investment, tax, and unemployment. The study adopted the model used by Baxter and King (1993) as further explored by Fatas and Mihov (2001) who estimated employment against fiscal and non-fiscal variables. Murwirapachena et al. (2013) adjusted the model to suit the situation of South Africa. Applying all the necessary diagnostic tests, they subsequently tested for cointegration and applied a vector error correction model (VECM) to estimate the long-run effect of fiscal policy on unemployment and the other economic indicators. The results of their study showed that government consumption expenditure and tax have a positive effect on unemployment while

government investment expenditure has a negative impact on unemployment in South Africa. Based on the results of their research, they recommended that the South African government reduce the corporate tax rate from 28 percent to numbers below 20 percent as adopted by some OECD countries' policy framework.

Nwosa (2014), utilized an Ordinary Least Square (OLS) estimation technique to investigate the impact of government expenditure on unemployment and poverty rates in Nigeria. Annual timeseries data on the variables; unemployment rate, poverty rate, government expenditure, public debt and economic growth from the period 1981 to 2011 were employed. The results of the study presented a positive and significant effect of government expenditure on the unemployment rate. On the other hand, there was a negative and insignificant relationship between government expenditure and the poverty rate.

With the same country under study, Kelechukwu and Amadi (2016) assessed the relationship between fiscal policy and the unemployment rate in Nigeria using a parsimonious Error Correction Model (ECM) to an annual time series data spanning from the period 1970 to 2013. With government expenditure, government debt stock, government tax revenue, and the unemployment rate are the key variables, the study revealed that there is a negative relationship between fiscal policy tools (government expenditure and government debt stock) and the unemployment rate in Nigeria while government tax revenue positively impacted the unemployment rate. This means that a rise in tax rate increased the unemployment rate in Nigeria. According to their study, there existed also a long-run equilibrium relationship between fiscal policy and unemployment in Nigeria. Concluding the study, the authors suggested based on the outcome of the empirical and other theoretical analysis that the Nigerian government strongly implement

viable fiscal and monetary policies and diversify the country's economy to attract more foreign investors and create more job opportunities for people.

In examining the dynamic effects of fiscal policy on output and unemployment in Nigeria under the Keynesian framework, Abubakar (2016) utilized the structural vector autoregression (SVAR) methodology with long-run restrictions proposed earlier by Blanchard and Quah (1989) to analyze annual series of data on the variables; Gross Domestic Product, (GDP), unemployment rate, public expenditure and total revenue. Annual time series data covering the years 1981 to 2015 were used. The result of the SVAR model analysis revealed that shocks in public expenditure exert positive and a long-term effect on output. Meanwhile, shocks in total revenue showed a negative impact but only in the short run. In the conclusion of the entire research, the study suggested that the government restructure its spending, and also enhance its revenue by enlarging its revenue base through effective and efficient tax systems.

Employing a panel threshold model to assess the relationship between government consumption and employment, N'guessan (2017) evaluated an annual dataset of 41 African countries covering the period from 1980 to 2014. The study observed a threshold effect in the relationship between government consumption ratio and employment whereby the optimal government consumption ratio is 20.43 percent. Again, most of the countries' government consumption ratio was above the threshold value during the period from 1981 to 1987. After 1987, most of the countries reached the low regimes of government consumption. The outcome of the estimation showed that below the optimal value which was 20.43 percent, government consumption has a positive and significant effect on employment. Nonetheless, beyond the optimal value, the government consumption ratio

has no effect on employment. The findings from the study suggested that a non-linear nature of the relationship between government consumption and employment should be considered in evaluations since ignoring that could lead to misleading policing recommendations.

For the past years, quite extensive research has evolved concerning government expenditure as a fiscal policy tool and other key macroeconomic indicators aside unemployment in various developed, emerging and developing countries. For instance, Folawewo and Adeboje (2017) built their analysis on Okun's Law and Philips curve theoretical frameworks to determine the relationship between some macroeconomics aggregates and unemployment in the Economic Community of West African States (ECOWAS). Making use of the fixed effects and random effects estimation of panel data as well as fully modified ordinary least squares (FMOL) panel data estimation technique on an annual data spanning from 1991 to 2014, they empirically examined both aggregate ECOWAS data level and a sub-regional level, that is, Francophone and Anglophone country levels.

The outcome of the study exposed that gross domestic product (GDP) growth has a reducing but insignificant impact on the unemployment rate, which indicates low employment elasticity of growth in the region. Inflation exerted a prodigious positive effect on unemployment, presenting invalidity of the Phillips curve hypothesis. Another vital finding of the study was the positive effect of labor productivity on the unemployment rate, manifesting a trade-off between labor productivity and employment. Meanwhile, foreign direct investment (FDI) and external debt exhibited a weak negative impact on unemployment, but population growth showed a positive effect. The study recommended

the essence of an enabling macroeconomic environment that will ensure the creation of employment in the ECOWAS region.

In the same region, Magazzino (2016) investigated fiscal variables, net lending, government expenditure and revenue, and growth convergence in the ECOWAS region. Incorporating a yearly data series covering the period 1980 to 2011 in 15 Economic Communities of West African States (ECOWAS) countries, the relationship among fiscal variables, economic growth and trade was examined through panel data econometric technique. The study further analyzed the long-run relationship between the fiscal variables and economic growth. From the paper's empirical analysis, government expenditure and revenue exhibited pro-cyclical impact on the West African Economic and Monetary Union (WAEMU) and ECOWAS countries, while fiscal balance showed a pro-cyclical nature for WAEMU during the years 1999 to 2011.

Also, there was a weak long-run relationship between government expenditure and revenue, but for only the case of the West African Monetary Zone (WAMZ) countries. From the Granger causality analysis, there was a mixed outcome for WAEMU countries. Meanwhile, for four out of the six WAMZ countries (Gambia, Liberia, Nigeria, and Sierra Leone) the claim of the "tax-and-spend" hypothesis stands since government revenue usually stimulates government spending. The study revealed that in the last three decades, there has been a decrease in the variability of the cyclical component of economic growth, both for WAEMU and WAMZ member states.

Attempting to explore the relationship between government expenditure and economic growth, Ogundipe (2013) investigated fifteen ECOWAS countries by adopting a panel data estimation framework covering annual data series from 2000 to 2010. Using

the fixed effects and random effects estimation technique, the Hausman test used in the model estimation accentuated the suitability of the fixed effect model. The study revealed that government expenditure induces a positive inelastic variation on economic growth while the growth rates of government expenditure exert a nearly perfect inelastic negative variation on GDP growth rates, and this was linked with the weak fiscal discipline in the economy of Nigeria. The results from the estimation of growth rates were considered more relevant to the study since the presence of rates would have justified the periodic effect. The study suggested policy recommendations such as the essence of developing institutions that would warrant a realistic, transparent and appropriate direction of government spending towards productive economic activities.

Endogenous growth theory extrapolates that the effect of fiscal policy on growth depends on the structure as well as the level of taxation and expenditure and so using a panel data estimation technique to analyse a more up to date data on some selected Sub Saharan African countries covering the years 1990 to 2012, Ugwuanyi and Ugwunta (2017) examined fiscal policy and its effect on economic growth in those countries. Basing the study on ex-post facto research design, the authors divided the fiscal policy variable into four categories; productive expenditure, unproductive expenditure, distortionary taxes, and non-distortionary taxes.

The findings of the research using the panel data estimation technique under the fixed-effect assumptions disclosed that government productive, unproductive expenditures, distortionary tax (a proportional tax on output at the rate) and non-distortionary taxes have a significant impact on the economic growth of sub-Saharan African countries. It was discovered that distortionary taxes increase economic growth

while productive expenditures impede the economic growth of Sub Saharan countries. The findings of the study also proposed that consumption taxation can pragmatically be considered as non-distortionary instead of being regarded as barely a mild distortionary as compared to income taxation. On the other hand, the budget balances of sub-Saharan African countries were revealed to exert a positive but insignificant impact on the economic growth of sub-Saharan African countries.

Besides the use of the fixed and random effects panel data estimation technique to assess the effect of fiscal policy on economic growth, Adefeso (2016) analysed the performance of productive government expenditure on the economic growth of sub-Saharan Africa by using a Generalised Method of Moments (GMM) estimation technique on a dynamic panel data model. The study explored 20 sub-Saharan African countries with the estimated years spanning from 1980 to 2010. Following close to the findings of Ugwuanyi and Ugwunta (2017), the outcome of the study disclosed an antithetical link between productive government spending and economic growth in sub-Saharan African countries. Divergent from the expected results of the study but analogous with most previous studies, productive government expenditure showed a negative effect on economic growth. The budget deficit was also revealed to impact negatively on economic growth which is also similar to studies conducted on most African countries.

Moreover, the study uncovered productive government expenditure to not really being productive most particularly when financed by non-distortionary government tax revenue in the sub-Saharan African region, thus, concluded that productive government expenditure and its matching source of funding are counterproductive for the economic well-being of African countries.

Using the same Generalised Method of Moments (GMM) estimation technique, Adamu et al. (2017) conducted a study on globalization and its influence on unemployment in sub-Saharan African countries. Evaluating 35 selected countries in the sub-Saharan African region for the period 2007 to 2014, the empirical results of the study exposed the significant effect of the aggregated globalization measures (economic, social and political) on the unemployment rate. Meanwhile, amongst the components of globalization, political globalization is the sole constituent that reduces unemployment. Economic growth rate and labor market regulations showed a significant and negative relation to unemployment while inflation and wage rate exerted a positive effect on the rate of unemployment.

Since the study findings showed that stagflation exists in SSA at the moment, sustaining a low level of inflation is significant to addressing the unemployment situation in sub-Saharan Africa. Therefore, the study recommended that policies aimed at cutting down the unemployment rate should target low inflation rates, political globalization, labor market regulation, and economic growth. Governments in the region should embark on policies that would safeguard the regulations of the labor market to be more flexible so that the true value of globalization can be absorbed into their economies which can lead to a significant reduction in the unemployment rate.

In the same sub-Saharan African region, Ahmed and Hanif (2018) evaluated the validity of Wagner's law by studying the impact of public expenditure on the economic growth of ten selected sub-Saharan African countries. The paper tested five variants of Wagner's law for the period 2005 to 2014, employing a panel data estimation approach involving cointegration and causality. The results of the study uncovered a long-run relationship between public expenditure and the other explanatory variables used as



substitutes for income. The long-run causality tests pointed out a bidirectional causality between expenditure and income in all models with the exclusion of the Gupta model. The research concluded that for the Sub-Saharan Africa region, both Wagner's law the Keynesian hypothesis have a valid tendency under the period of study. The reason being that there has been a predisposition of public expenditure growing relative to national income (Wagner's law) and that public spending is a policy mechanism (an exogenous factor) for increasing national income (Keynesian hypothesis) during the 10-year period.

Since subsequent studies on the government expenditure and growth nexus present inconclusive empirical results, Yasin (2011) reassessed the impact of government spending on economic growth making use of a panel data set spanning from 1987 to 1997 of 26 sub-Saharan African countries. The model was estimated using two alternate panel data estimation methods; fixed effects and random effects. The model was formed from an aggregate production function with government spending, foreign assistance for development and trade-openness as the explicit input factors. The findings from the fixed effects and random effects estimation techniques showed that government spending, trade-openness, and private investment spending exert a positive and significant impact on economic growth. The growth rate in the population and foreign development assistance were statistically insignificant. A restricted version of the model was tested, and it revealed that the influence of foreign development assistance and the population growth rate on economic growth are statistically zero.

In the context of Asia, Matsumae and Hasumi (2016) conducted a study on the impact of government spending on unemployment in the Japanese economy. The study estimated a twelve variable model using quarterly data from 1980Q2 TO 2012Q4. Tailing

the model of Gali et al. (2012) into a medium-scale DSGE model with the impact of government consumption to kindle private consumption and the effect of government investment to enhance the productivity of private firms in the short run via the accretion of public capital. The findings of the research presented evidence that showed that both government consumption and investment reduce unemployment. And the attribute of this reduction is channeled to the traditional impact of a perk up in aggregate demand. On the other hand, the effect of government consumption expenditure to stimulate private consumption is relatively small. The study also discovered that there exists a short-term effect of government investment on the productivity of private firms which increases real wage but does not exert much impact on unemployment variations.

A study by Zhang and Zou (1998) sought to investigate fiscal decentralization, public spending and economic growth in China. With the interest of exploring how the apportionment of fiscal resources between the central and local governments has impacted the Chinese economic growth since the reforms commenced in the 1970s, the study estimated an annual data series covering the period 1980 to 1992 for 28 provinces. The empirical analysis presented results that showed a higher degree of fiscal decentralization of government spending linked with a lower provincial economic growth over the past 15 years. The negative linkage between fiscal decentralization and provincial economic growth was found to be steadily significant and robust in China. The outcome was quite shocking in the sense of the conventional view that fiscal decentralization customarily contributes positively to local economic growth. This surprising result was attributed to the recent stage of economic development in China, where the central government is incessantly constricted by the inadequate resources for public investment in national

priorities such as highways, railways, power stations, telecommunications, and energy. Such essential infrastructure projects may induce a substantial effect on growth across provinces than their counterparts in each province.

In the same Asian region, Tulsidharan (2006) empirically reviewed the effect of government expenditure on economic growth in India using annual data on government final consumption and gross national product (GNP) at market price in nominal and real terms covering the years 1960 to 2000. The paper employed the Granger causality analysis to examine a bio-directional causality between government expenditure and economic growth as well as an error correction model to estimate the long-run relationship between government expenditure and economic growth. The data at the current price exhibited a unidirectional causality from GNP at market price to government final consumption expenditure. Meanwhile, the data in real term levels failed to confirm the causality test. The principal findings of the study revealed that in nominal terms, an increase in government final consumption expenditure results in an invariably higher economic growth in India.

Rehman et al., (2010) attempted to examine the state and the direction of causality between public spending and national income along with various chosen components of public expenditure in Pakistan. The study utilized the Toda-Yamamoto causality test to Pakistan data from 1971 to 2006. The results of the causality analysis showed that there exists a unidirectional causality moving from GDP to government expenditure, which is in support of Wagner's Law. Furthermore, disaggregating government expenditure into different levels, the study disclosed that only GDP causes administrative expenditure while there was no causality revealed in development expenditures, defense expenditures and

debt-servicing expenditures. In total, the study did not favor the existence of the Keynesian hypothesis both at the aggregate and disaggregate levels of public expenditures causing economic growth in the Pakistani economy.

## **CHAPTER THREE**

### **OVERVIEW OF THE TRENDS IN GOVERNMENT EXPENDITURE AND UNEMPLOYMENT IN SUB-SAHARAN AFRICA**

#### **3.0 Introduction**

This chapter presents the trends in the two forms of government spending understudy and unemployment in some of the countries in Sub-Saharan Africa. Analysis of the performance of fiscal policy over the years in some of the countries in the region will be discussed and also there will be an outlook at the labor market to see if there has been an improvement over the years. It is organized into two broad sections. The first section presents the review of fiscal policy implementation in some African countries and the second section presents a general overview of the trends in unemployment in Africa.

#### **3.1 Overview of Fiscal Policy Implementation in Sub-Saharan Africa**

Most of the developing nations in Sub-Saharan Africa devoted to government interventionist policies during the early 1960s. However, the setbacks of these failures resulted in economic and institutional reforms in the 1990s which were instigated by a constricted role of the state, chiefly targeting property rights improvements, raising taxes, regulating the monetary base, providing basic education, health and infrastructure, and public services. In spite of all these conventional initiations, the burden of the public sector is still very weighty in most of the countries in the Sub-

Saharan region, which induces some sort of constrictions on the design and implementation of fiscal policies.

According to (Auerbach,1995), fiscal policy implementation has a number of constraints subjected to it. These constraints may arise from among other factors such as strategic considerations that result in overambitious fiscal targets, difficulties in real-time forecasting of downturns and bounce backs, weak budget procedures, and political pressure to overspend or under tax. In 2015, the IMF reported that Sub-Saharan Africa's growth was to decelerate amidst weak global economic conditions, but some countries in the region were in good shape to continue posting strong growth. Commodity exporting countries in the region especially oil producers such as Angola, Equatorial Guinea, Nigeria, and the Republic of Congo, but also producers of minerals and metals, such as Botswana and Mauritania have been recognizing setbacks to growth. In other cases, growth miseries, such as in the cases of South Africa and Zambia, are intensified by domestic factors, notably electricity supply bottlenecks. Political and social tensions are taking a stroll on economic activity in Burundi and South Sudan. However, several countries, like Côte d'Ivoire, Ethiopia, Mozambique, Rwanda, and Tanzania, are fighting the weakening regional trend and continuing to post robust growth.

According to (Andrews, 2010; Peterson, 2010) budgets made by governments in SSA are often better on paper than they are put into effect. In general, governments of Sub-Saharan countries encounter lots of challenges in implementing fiscal policy due to certain factors such as:

- i. Inequitable distribution of income and the ever-growing proportion of the population stung by extreme poverty;
- ii. Lack of suitable incentives for the private sector operations in terms of regulatory structures, judiciary systems, and competitive advantage.
- iii. Governmental and institutional incompetence as a consequence of several rigidities as well as credibility and governance challenges.
- iv. Numerous market failures due to imperfect information, the incidence of monopolistic customs and different forms of negative externalities.
- v. Susceptibility to external shocks of all nature; natural disaster, world prices of exported goods, over dependency on volatile and unpredictable aid flows, etc.

Further constraints include frailties in forecasting capacity, poor data quality, inadequate and ineffectual budget institutions, slackness in project execution, and unstable political systems (IMF, 2010).

Sub-Saharan African countries in the past two decades have put into effect macroeconomic policies from the perspective of a structural adjustment program. The IMF report in 2015 further indicated that policy buffers were low in most of the countries and thus, constraining the response to the current environment and pointing out the essence for African countries to improve domestic resource mobilization and improve public expenditure efficiency to establish fiscal space via proper prioritization of crucial public services and infrastructure (IMF,2015).

According to the same report in 2015, policy uncertainty, fiscal consolidation, electric power shortages, and rising import costs were expected to lessen gradually to help in promoting growth in Nigeria. South Africa was forecasted to still be in the battle of higher unemployment rates, persistent power and infrastructure constraints coupled with complicated labor relations and policy insecurity weigh on activity. Angola was expected to experience a modest resurgence in spite of the increase in oil production, as government spending stays constrained, and higher inflation weighs on household consumption.

### **3.2 Trends in Unemployment and Fiscal Policy in Sub-Saharan Africa**

Unemployment has experienced fluctuating movements over the past decade in Africa. Most of the countries still have significantly high rates of unemployment. The graphs in appendix 1A show trends in unemployment (% of the total labor force) for all the countries in the sample, grouped based on regions. The graphs show a consistent decline in unemployment after 2010, though the values remain relatively high. This shows that unemployment remains a major predicament in Africa. Countries such as South Africa and Sierra Leone have recorded the highest unemployment rates in Africa. South Africa had unemployment as high as 27.1% in 2018, while Sierra Leone recorded over 50% of the total labor force is unemployed. Other countries have however made great strides. Rwanda as of 2018 has less than 1% of the total labor force is unemployed, Tanzania has less than 2%, Cote D'Ivoire has a little above 2%. Niger has below 1% and Madagascar has close to 2%.



Based on the regional comparison, the problem seems to be exacerbated in Southern Africa, West Africa, and Central Africa, compared to East Africa. Nevertheless, unemployment is still a predominant issue plaguing Africa as a continent.

Fiscal policy involves government spending and taxation. This study, however, concentrates on government spending as the major tool for fiscal policy. Governments spend on a variety of activities. Ranging from more recurrent expenditures such as workers' compensation to capital expenditures such as infrastructure spending. The graphs in appendix 1B show trends in government consumption and investment spending as a percentage of GDP for all the countries in the sample, grouped by regions.

Government consumption expenditure has been fluctuating over the period under study. However, generally, it has been on an upward trend over the period. Most of the countries have recorded more than 20% at different points from 1990 to 2018. Consumption expenditure is generally considered less growth-enhancing compared to capital expenditure. Therefore, the growing size of government consumption has become of great concern in Africa. Growing wage bills have been a major contribution to the rising trend in government consumption expenditures. This is due to the ever-growing pressure on the governments of these countries to expand the public sector to absorb the growing number of unemployed people.

Administrative expenses are also major contributors to rising consumption expenditures. Most countries in Africa have large government size with rampant bureaucracies that impose high administrative costs. Corruption, which is a major issue in African politics also imposes significant costs. This spending is considered less beneficial to employment generation than investment expenditure. Investment spending has similarly

experienced an upward trend. A comparison with consumption expenditure, however, shows that consumption expenditure exceeds investment expenditures. Much of the investment expenditures in most African countries have been mainly financed through external borrowing, rather than from internally generated incomes.

The rising government spending especially investment spending is expected to result in increased employment, and hence reduce the level of unemployment in the country. This constitutes the major goal of this study. The result is will seek to establish the nature of the relationship between government spending and unemployment in Sub-Saharan Africa, and hence determine how effective fiscal policies have been, as tools to stabilizing the macroeconomic variables especially unemployment.

## **CHAPTER FOUR**

### **METHODOLOGY AND DATA**

#### **4.0 Introduction**

This chapter presents the methodology and data used in the study. The chapter is categorized into two main sections. The first section (methodology) focuses on the various steps taken to attain the goal of the study, model specification and estimation technique for the study. Section two, on the other hand, encompasses the data used in the analysis, definition of variables, the sources of data and its measurement and theoretical framework of the variables incorporated.

#### **4.1 Methodology**

In this section, the estimation technique and model specification of the research will be established. The study will encompass the panel data estimation technique on 34 sub-Saharan African countries for the period 1990 to 2017. Panel data models examine group (individual-specific) effects, time effects, or both in order to deal with heterogeneity or individual effect that may or may not be observed (Park, 2011). These effects are either fixed or random effect.

There will be three techniques of the panel data estimation analysis, namely pooled OLS regression, fixed effects and random effects modeling. To prevent any spurious analysis in the first place, a test for stationarity of variables will be conducted to ensure that the

variables are stationary. The Fisher type Panel unit root test developed by Choi (2001) will be used for this study. We will then examine the effect of government spending on unemployment in a pooled OLS regression.

The pooled OLS produces efficient and consistent parameter estimates if the individual effect (cross-sectional or time-specific effect) does not exist (Park,2011). Thus, a baseline model will be constructed and then an initial pooled OLS estimation will be analyzed.

$$y_u = \alpha + X_u\beta + \varepsilon_u \text{ (} u_i = 0 \text{)} \dots\dots\dots (1)$$

I will proceed to estimate the fixed and random effects models. The major difference between fixed effect models and random effect models exist in the role of dummy variables. Fixed effect model examines whether intercepts vary across groups or time periods. It evaluates the individual differences in intercepts, by assuming the same slopes and constant variance across individual (group and entity). The fixed effect model is estimated by least squares dummy variable (LSDV) regression (OLS with a set of dummies) and within effect estimation methods (Park, 2011). The generalized fixed effect model is given by;

$$y_u = (\alpha + u_t) + X_u\beta + v_u \dots\dots\dots (2)$$

The random effect model presumes individual effect (heterogeneity) to be uncorrelated with any regressor and then estimates error variance specific to groups (or times). The intercepts and slopes of the regressors are the same across individuals or time periods. The difference among individuals (or time periods) lies in their individual specific

errors, not in their intercepts (Park, 2011). The generalized random effect model is given by;

$$y_u = \alpha + X_{it}\beta + (u_t + v_{it}) \dots \dots \dots (3)$$

Following these two model estimations, a Hausman specification test (Hausman, 1978) will then be evaluated to determine the appropriate model for the study.

#### 4.1.1 Model Specification

To investigate the impact of government spending on unemployment, the study will model unemployment as a function of fiscal policy tool, government expenditure, by disaggregating government expenditure into recurrent (government consumption expenditure) and capital (investment expenditure), the relevant control variables; foreign direct investment (FDI), population growth, agriculture sector, external debt and private investment. The baseline model for the panel data analysis is specified below;

$$UNEMP = f(GOVCONS, GOVINV, FDI, POPG, AGRIC, EXTD, PRINV)$$

To estimate the  $\beta$  parameters, the function is transformed into the generalized equation below;

$$UNEMP_t = \beta_0 + \beta_1 GOVCONS_t + \beta_2 GOVINV_t + \beta_3 FDI_t + \beta_4 POPG_t + \beta_5 AGRIC_t + \beta_6 EXTD_t + \beta_7 PRIVTINV_t + \mu_t \dots \dots \dots (4)$$

Where;

$\beta_0$  represents the intercept of the model,  $\beta_1, \beta_2, \beta_3, \beta_4, \beta_5, \beta_6, \beta_7$  are the coefficients of the independent variables with a prior expectation;  $\beta_1 < 0, \beta_2 < 0, \beta_3 < 0, \beta_4 > 0, \beta_5 < 0, \beta_6 < 0, \beta_7 < 0$ ,  $\mu_t$  is the error term which represents the omitted variables in the model.

The variables incorporated in analyzing the government spending and unemployment nexus are defined below;

UNEMP = Unemployment (% of total labor force)

GOVCONS = Government Consumption Expenditure (% of GDP)

GOVINV = Government Investment Expenditure (% of GDP)

FDI = Foreign Direct Investment (% of GDP)

POPG = Population Growth (annual %)

AGRIC = Proxy for Agricultural sector (agriculture, forestry, and fishing, value added) (% of GDP)

EXTDT = Percentage change in External Debt stock

PRIVTINV = Private Investment (% of GDP)

$\mu_t$  = Error term

#### **4.2 Source of Data, Definition, and Measurement of Variables**

Annual data spanning from 1990 to 2017 on 34 selected Sub-Saharan African countries will be used in the study to estimate the relationship between government expenditure and unemployment. All data on the variables were obtained from the World Bank's World Development Indicators (WDI) online database. The countries selected are based on the availability of continuous data for the period under study.

i. **Unemployment:** According to WDI, unemployment is the share of the labor force that is without work but available for and actively seeking employment. It is measured as a percentage of the total labor force and the data is modeled according to the International Labor Organisation (ILO) standards.

ii. **Government Consumption Expenditure:** This is a recurrent government expenditure which includes all government current expenditures for purchases of goods and services (including employees' compensation). It also includes most expenditures on national defense and security but excludes government military expenditures that are part of government capital formation (WDI,2019). The variable is expressed as a percentage of GDP. Empirically, the variable is expected to have no improvements in employment. Considering the examples mentioned earlier (workers' salaries, purchases of goods and services, expenditures on national defense), the labor market is actually affected by these expenditures since job creation is not realized from such spending.

iii. **Government Investment Expenditure:** This type of government spending involves public financed infrastructure projects such as roads, railways, schools, hospitals, housing and communication networks. The public sector develops some projects with desired social returns (public goods) which may not seem profitable for the private sector. Governments can use the public direct investment for countercyclical policy objectives. For example, many OECD governments initiated fiscal stimulus plans via an increasing public investment in soft and hard infrastructures during the 2008 economic downturn (OECD,2013). Through these projects, employment is created. Thus, the expectation of this variable is to decrease unemployment.

iv. **Foreign Direct Investment (net inflows):** According to WDI, FDI is the net inflows of investment to acquire a lasting management interest in a company operating in an economy other than that of the investor. It is the sum of equity capital, reinvestment of earnings, other long-term capital, and short-term capital as shown in the balance of payments. Foreign Direct investment represents the investment involving a long-term relationship and reflecting a lasting interest and control of a resident entity in one economy (foreign direct investor or parent enterprise) in an enterprise resident in an economy other than that of the foreign direct investor (Orji, Orji, Nchege, & Okafor, 2015). For most African countries where capital acquisition is a major constraint, FDI performs a principal role in job creation. Employments generated from FDI inflows also have a tendency of improving the aggregate labor productivity in the host country (Coniglio et al., 2015). There exist evidence of such productivity advantages of Foreign Direct Investment (Conyon et al., 2002; Girma and Görg, 2007; Arnold and Javorcik, 2009).

v. **Population Growth:** Population growth is generally considered as an increase in the number of people living in a country, state, county, or city. The study will utilize population growth measured as an annual percentage rate in the empirical estimation. According to WDI estimation, the population variable is based on the de facto definition of population, that is it records all residents regardless of legal status or citizenship. Among major areas, Africa has a higher rate of population growth. According to a 2019 report by the United Nations (UN) on population, Africa will possess more than half of the world's population growth between now and 2050 and the population of sub-Saharan Africa is estimated to double by 2050. The region's population is projected to account for a higher population growth rate over the coming decades whereas other regions are expected to experience a



decrease in population growth rate. Most empirical literature supports the negative impact population growth has on employment. Herrin and Pernia (2014) propounded in their study that rapid population growth that results in an increase in the labor force could exacerbate the unemployment situation in developing countries. In the ECOWAS region, the active labor force population represents more than half of the entire regional population (World Bank, 2015); nonetheless, the region has not profited from this enormous pool of labor force. It is rather an encumbrance.

vi. **Agriculture:** Agriculture valued-added was used as a proxy for the agriculture sector. This variable is measured as a percentage of GDP. Based on WDI measure, agriculture value-added constitutes forestry, hunting, and fishing, as well as cultivation of crops and livestock production. Value added is the net output of a sector after adding up all outputs and subtracting intermediate inputs (WDI, 2019). Significant shares of the employed population in Africa continue to work in agriculture (ILO, 2018). In the sub-Saharan region, the agricultural sector employs a larger pool of the labor force, especially in rural areas.

vii. **External Debt:** Total external debt stock is measured as a percentage change in the total external debt stock of the country. External debt refers to the debt owed by a country to non-residents repayable in currency, goods, or services. Total external debt is the sum total of all public, publicly guaranteed, and private non-guaranteed long-term debt, use of IMF credit, and short-term debt (WDI, 2019). Funds derived from external debt when channeled to investment expenditures have a tendency for creating employment. Studies by Egbulonu and Amadi, (2016) and Adeboje and Folawewo (2017) support the positive effect of external debt on employment.

viii. **Private Investment:** Private investment is measured as a percentage of GDP. It covers gross outlays by the private sector (including private non-profit agencies) on additions to its fixed domestic assets (WDI, 2019). The private sector involving businesses and projects contributes to employment in an economy.

## CHAPTER FIVE

### ESTIMATION AND DISCUSSION OF RESULTS

#### 5.0 Introduction

The section will present the descriptive statistics on the data of the variables that will be incorporated in the regressions. Empirical results from the pooled OLS, fixed effects, and random effects estimation will be discussed. All the diagnostic tests for the robustness of the estimation will be discussed as well.

#### 5.1 Descriptive Statistics

The section begins the empirical analysis with a descriptive statistic of the variables to examine the characteristics of the variables. Table 5.1 below presents the summary statistics of the variables used for this analysis. These statistics are for all 34 countries in the sample. The sample of 34 includes 13 West African countries, 12 east African countries, 5 central African countries and 4 southern African countries. These countries are selected based on data availability, especially for the dependent and independent variables of interest.

**Table 5.1 Summary Statistics of Variables**

Variable	Obs	Mean	Std. Dev	Min	Max	Skewness	Kurtosis
UNEMP	884	7.5002	6.8337	0.285	33.473	1.55	4.833
GOVCONS	899	14.4064	5.8665	2.047	54.797	1.672	9.688
GOVINV	801	6.8889	4.0487	0.1001	31.2714	1.494	7.48
PRIVTINV	802	13.1054	7.2583	-4.079	52.648	1.274	6.92
AGRIC	903	25.7933	13.4297	1.828	61.4163	0.057	2.422
POPG	912	2.5778	0.9710	-6.185	7.918	-2.232	20.205
EXTDT	876	4.7405	19.2285	-74.545	255.556	2.939	43.323
FDI	903	2.9852	5.1449	-8.589	50.018	4.253	28.734

Unemployment as a percentage of total labor force averaged 7.50% over the period with a standard deviation of 6.83. The highest value of 33.47% was recorded by South Africa in 2001, while the least value of 0.29% was recorded by Niger in 2016. Government consumption expenditure as a percentage of GDP also averaged 14.41% with a standard deviation of 5.87. Zimbabwe recorded the lowest value of 2.047% in 2007 while the highest value of 54.797% was recorded by Eritrea in 1999. Government investment expenditure as a percentage of GDP averaged 6.89% with a standard deviation of 4.05. The highest value of 31.27% was recorded by Eritrea in 1999 while the lowest value of 0.1% was recorded by D.R. Congo in 1998.

Private investment expenditure as a percentage of GDP also averaged 13.11% with a standard deviation of 7.26. The highest value of 52.65% was recorded by Mauritania in 2004. Agricultural value-added as a percentage of GDP also averaged 25.79% with a standard deviation of 13.43. The lowest value of 1.83% was recorded by Botswana in 2004 while the highest value of 61.42% was recorded by Guinea Bissau in 1998.

Population growth averaged 2.58% with a standard deviation of 0.97. The lowest value of -6.19% and the highest value of 7.92% were both recorded by Rwanda in 1993 and 1998 respectively. Percentage change in external debt stocks averaged 4.74% and has a standard deviation of 19.23. The highest change of 255.56% was recorded by Botswana in 2008. The highest reduction of 74.55% was recorded by Guinea Bissau in 2010. Foreign direct investment (Net inflows) as a percentage of GDP averaged 2.99% with a standard deviation of 5.14. The highest value of 50.02% was recorded in 2014 by the Congo Republic and the highest reduction (8.59%) was recorded by Gabon in 1996.

The skewness and kurtosis values are used to assess the normality of the distribution of the variables. All variables show a positive skewness aside population growth which shows a negative skewness value. Standard kurtosis suggests that a value above 3 shows evidence of non-normality. However, Kim (2013) suggests that this criterion may be unreliable when the sample size exceeds 300. He suggests that an absolute kurtosis value greater than 7 is evidence of non-normality. Based on this criterion, all variables are but unemployment, private investment, and Agric value-added are normally distributed.

The kurtosis statistics again reveal that agriculture valued added (AGRIC) has a platykurtic distribution meaning that the distribution is flat-topped curve relative normal distribution whereas the other variables have leptokurtic distribution implying that their distributions are high peaked relative to the normal distribution.

## **5.2 Test of Stationarity**

Before any analysis can be conducted, it is relevant to determine the stationarity of the variables that are employed in the model. This is to prevent the possibility of spuriousness. The Fisher type Panel unit root test is used for this study. The test was developed by Choi (2001). This test provides advantages over other tests because it assumes that the number of panels is either infinite or finite. Each group or panel is also assumed to have different types of non-stochastic and stochastic components. Also, the possibility that some groups may have unit root while others do not is accurately managed by the test. The augmented Dickey-Fuller option is chosen for this study. The stationarity test results are presented below in Table 5.2.

**Table 5.2 Stationarity Test of Variables**

<b>Variable</b>	<b>Test Statistic</b>	<b>P-value</b>	<b>Order</b>
<b>UNEMP</b>	2.04**	0.02	I (0)
<b>GOVCONS</b>	2.503***	0.0062	I (0)
<b>GOVINV</b>	4.472***	0.000	I (0)
<b>PRIVTINV</b>	6.976***	0.000	I (0)
<b>AGRIC</b>	2.055**	0.0199	I (0)
<b>POPG</b>	46.862***	0.000	I (0)
<b>EXTDT</b>	19.357***	0.000	I (0)
<b>FDI</b>	6.722***	0.000	I (0)

The results show that all variables are stationary at levels. This suggests that regression on these variables will not produce spurious results.

### **5.3 Presentation and Discussion of Regression Results**

The study adopts the Pooled OLS, Fixed and Random effects estimation techniques to analyze the relationship between government expenditure and unemployment in Sub-Saharan Africa for the period 1990 to 2017. The pooled OLS produces efficient and consistent parameter estimates if the individual effect in a cross-sectional or time-specific effect does not exist (Park,2011). Both Fixed and Random effect estimation techniques are adopted to account for the fact that the panels or countries may be heterogeneous. The Fixed effects model assumes that the heterogeneity is not random, and hence transforms the model to eliminate the heterogeneity. The Random effects, however, assumes the heterogeneities are random and hence captures it with a random error. The Hausman test is conducted to determine which of the models is appropriate. The results for the Pooled OLS model are presented in Table 5.3 below with the standard errors in parenthesis.

**Table 5.3 Pooled OLS Regression**

	Pooled OLS	Pooled OLS (Robust Results)
<b>VARIABLES</b>	<b>UNEMP</b>	<b>UNEMP (Model I)</b>
<b>GOVCONS</b>	0.1206***	0.1206***
	(0.0389)	(0.0351)
<b>GOVINV</b>	-0.1081**	-0.1081**
	(0.0554)	(0.0545)
<b>PRIVTINV</b>	0.0152	0.0152
	(0.0318)	(0.0260)
<b>AGRIC</b>	-0.2780***	-0.2780***
	(0.0170)	(0.0175)
<b>POPG</b>	-0.7560***	-0.7560***
	(0.2111)	(0.2762)
<b>EXTDT</b>	-0.0106	-0.0106
	(0.0415)	(0.0098)
<b>FDI</b>	-0.0367	-0.0367
	(0.0415)	(0.0309)
Constant	15.6606***	15.6606***
	(1.0230)	(1.0932)
Observations	761	761
R-squared	0.39	0.39
Number of countries	34	34

Standard errors in parentheses, \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

#### 5.4 Fixed Effect and Random Effect Estimation

The results for the Fixed and Random Effect models are presented in Table 5.4 below with the standard errors in parenthesis.

**Table 5.4 Fixed and Random Effect Regression**

	Fixed Effect	Random Effect	Elasticities at the Means (Fixed Effects)
<b>VARIABLES</b>	<b>UNEMP (Model II)</b>	<b>UNEMP (Model III)</b>	<b>UNEMP</b>
<b>GOVCONS</b>	0.0699*** (0.0175)	0.0718*** (0.0176)	0.1343***
<b>GOVINV</b>	-0.0833*** (0.0194)	-0.0840*** (0.0196)	-0.0764***
<b>PRIVTINV</b>	0.00507 (0.0112)	0.00445 (0.0113)	0.00885
<b>AGRIC</b>	0.0204* (0.0112)	0.0122 (0.0113)	0.0703*
<b>POPG</b>	0.0568 (0.0709)	0.0473 (0.0718)	0.0195
<b>EXTDT</b>	-0.00188 (0.00287)	-0.00184 (0.00291)	-0.0202
<b>FDI</b>	-0.0319** (0.0131)	-0.0335** (0.0133)	-0.01271**
Constant	6.619*** (0.475)	6.721*** (1.034)	
Observations	761	761	
R-squared	0.065	0.064	
Number of countries	34	34	

Standard errors in parentheses, \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

### 5.5 Hausman Test

The next step is to conduct the Hausman test to determine if the Fixed effects model is appropriate. As stated earlier, while the fixed effect eliminates the heterogeneity from the model, the random effect model captures the individual country specific heterogeneity into the error term. If these country specific characteristics are correlated with any of the explanatory variables, the estimates of the random effects model become biased and inconsistent. The null hypothesis of the Hausman test is that the Fixed and Random effects models produce similar results. When this hypothesis is rejected, the conclusion is that the



country specific characteristics may be correlated with the explanatory variables and hence, the random effects model is not appropriate. The test results are stated below in Table 5.5.

**Table 5.5 Hausman Test Results**

<b>Ho</b>	<b>Differences in coefficients not systematic</b>
<b>Chi-Squared</b>	28.09
<b>p-value</b>	0.0002

Since the p-value is less than 0.05, the null hypothesis is rejected. Hence the fixed effect is the appropriate model.

## **5.6 Interpretation**

The principal objective of this study is to investigate the effects of government spending on unemployment in the sub-Saharan region of Africa. For this study, the major fiscal policy tool is government expenditure which is further disaggregated into consumption and investment expenditures. Since the Hausman specification test (Hausman, 1978) suggested that the fixed effect model is appropriate for the study, results interpretation will be established from the Fixed Effect model estimation. Instead of interpreting the coefficients directly, it is more interesting to interpret the elasticities around the mean values of the variables. As a result, the elasticities are computed in column 4 of Table 5.4 and interpreted accordingly below.

With respect to the fixed effects results, it is observed that the government consumption expenditure coefficient showed a significant and positive sign. This suggests that, when all other variables are held constant, an increase in government consumption expenditures will result in an increase in unemployment in Sub-Saharan African countries.

Around the mean values, a 1% increase in government consumption expenditure as a percentage of GDP increases unemployment by 0.1343%, other variables held constant. This is significant at 1% level of significance. Comparing the three models, government consumption expenditure showed a highly significant and positive sign. With regards to the emphasis of this study, the observed positive relationship between government consumption expenditure and unemployment is in line with the study conducted by Murwirapachena et al (2013) but contrary to that of Holden and Sparrman (2016) and Matsumae and Hasumi (2016) who discovered a negative relationship of government consumption expenditure on unemployment.

The relationship between government consumption and unemployment goes against the null hypothesis of a negative relationship assumed earlier. However, it is plausible in the sense that consumption expenditure mainly comprises the purchases of goods and services as well as employee compensation, these spending may not have an immediate effect on employment. The growing rate of government consumption expenditure can, therefore, be identified as the reason for the failure of public spending to significantly affect unemployment in sub-Saharan Africa. Most governments have high consumption expenditure relative to investment expenditure. Since consumption spending does not generate immediate employment, the unemployment situation continues to persist despite the increased spending.

Government investment expenditure, however, complies with our a priori expectation by bearing a negative sign. This indicates an inverse relationship between government investment and unemployment and so as government investment rises, unemployment is reduced. Thus, around the mean values, a 1% increase in investment

spending reduces unemployment by 0.0764%, *ceteris paribus*. This is significant at a 1% significance level. Consistently, the sign of the coefficient was statistically significant and negative across the three models. The estimated result is consistent with the studies conducted by Holden and Sparrman (2016) and Murwirapachena et al (2013). Investment spending is more employment enhancing relative to consumption spending. These two findings, therefore, suggest that governments should target investment spending if it hopes to reduce unemployment significantly.

The estimated impact of Private investment spending as a percentage of GDP on unemployment is found to be positive, although the relationship is statistically insignificant in all three models. In line with the *a priori* expectation, agriculture value-added as a percentage of GDP is also found to reduce unemployment in the Pooled OLS model but not in the fixed effect and random effect model. The agriculture variable was not significant in the random effect model. The coefficient of agriculture variable in the fixed effects model is significant at 10% thus, other variables held constant, a 1% increase agricultural value-added as a percentage of GDP results in a 0.0703% increase in unemployment around the mean values. This outcome, though unexpected is reasonable. It reflects the fact that agriculture is fast losing its role as a leading source of employment in Africa. There are several problems that beset the agricultural sector in Africa which has greatly hindered its development. Subsistence agriculture is still very much a practice in several parts of Africa. Mechanization is still very low in this sector. These several bottlenecks could explain this positive relationship found in the fixed effects results.

Further, population growth is found to increase unemployment as expected and it follows the findings of Meier (1995), Herrin and Pernia (2014) and Folawewo and Adeboje

(2017). However, the coefficient is not statistically significant. External debt stock is found to decrease unemployment as expected but the coefficient is also not statistically significant.

Lastly, the results show that there exists an inverse relationship between foreign direct investment and unemployment which implies that a rise in FDI as a percentage of GDP has an employment development impact in SSA countries. This complies with our a priori expectation and it was consistent in all three models. Based on the elasticities computed at the means, a 1% increase in foreign direct investment reduces unemployment by 0.013%, *ceteris paribus*. The coefficient is statistically significant at 1% level of significance. This result is in consonance with studies undertaken by Jude and Silaghi (2015), Ogbeide et al. (2016) and Folawewo and Adeboje (2017). Inflows of investment into countries have the tendency of creating job opportunities to reduce unemployment in a country but it should be noted that such benefits are derived depending on the type of FDI inflow, the kind of production technology in the sector and the overall characteristic feature of such sector (Folawewo and Adeboje, 2017).

Notwithstanding the relevance of this outcome highlights on FDI promoting employment; it should be alerted of which type of FDI plays a key role in employment generation. Greenfield investments are noted to have significant and positive effects on the employment rate than the Brownfield ones, which have no or even negative effects on employment (Strat et al., 2015). Jeppesen and Mainguy (2007) argued in their research that most of the FDI inflows into many African countries have centralized on natural resources, a typical example of Brownfield investments with very low elasticity of labor employment.

It is thus imperative for diversification of the economies of SSA region into the Greenfield investments, more importantly in the market seeking ones, to attract foreign investors into the sectors. It is very essential for governments of the region to enact policies that will attract FDI which is more labor engrossing. This can be possible if the governments elevate local investments (private and public) and channel them towards the productive sectors of their economies that have higher labor absorptive capacity (Anyanwu, 2013).

## **CHAPTER SIX**

### **CONCLUSION AND POLICY RECOMMENDATION**

#### **6.0 Introduction**

This chapter is divided into two sections. The first section presents the summary and conclusion of the findings of the research. The second part expounds policy recommendations based on the empirical results.

#### **6.1 Summary and Conclusion of Findings**

Unemployment is one of the social cankers that hampers the economic development of most countries in the world and government policy intervention that can help control unemployment situations is regarded as very essential. Thus, this study investigated government expenditure in its disaggregated forms (government consumption expenditure and investment expenditure) and how these expenditures affect unemployment in 34 Sub-Saharan African countries for the period of 1990 to 2017.

Employing the panel data analysis technique with fixed effect and random effect estimations, the study revealed some interesting results that uncover the relationship between government expenditure and unemployment. Based on the fixed effect model estimation outcome, it was found that government consumption expenditure positively affects unemployment in SSA countries that is as government consumption expenditure increases, unemployment also increases, all things being equal. Stated differently, government consumption expenditure does not increase employment in the region. And

this is attributed to the fact that such government expenditure comprises purchases of goods and services as well as employee compensations. This kind of government spending may not have an immediate effect on employment. On the other hand, government investment expenditure showed an inverse relationship with unemployment. The inverse relationship (an increase in investment expenditure reduces unemployment) of government investment expenditure on unemployment is relatively ascribed to the immediate effect such expenditures have on the labor market. For instance, when the government embarks on investments like the construction of roads, schools, hospitals, and other infrastructure, employment extends right from the laborers to the people who would be working directly in the completed infrastructure. This makes government investment expenditures an obvious channel via which jobs can be generated.

Furthermore, the empirical results indicated a positive relationship between private investment and unemployment, but the effect was not statistically significant. In the same line, there was not enough statistical evidence to support the effect of population growth and external debt on unemployment in the selected SSA countries although population growth confirmed a positive effect and external debt a negative impact as expected earlier in the study.

The agricultural sector estimate did not support the a priori expectation of the study by showing a positive effect on unemployment (increases in agriculture value-added increases unemployment). Agriculture is one of the largest sectors in the economies of most sub-Saharan African countries but the relevant fact is that it is still an unattractive venture due to its nature in SSA countries (low mechanization, fewer rewards, poor market for produce). Although value-added in the sector may be rising, that does not necessarily imply

the sector is employing more labor. Thus the results presented by the analysis reflect the existing problem of the agriculture sector of most SSA countries.

Foreign direct investment (FDI) also followed the prior anticipation of the study; it showed an inverse relationship with unemployment. Thus, the inflow of foreign investment into the region increases employment. Although FDI is proven to be relevant in employment generation in SSA countries, it does depend on the type of investment inflows. The known types, Greenfield and Brownfield investments have their effects differently on job creation. According to Strat et al., (2015), Brownfield investments have no or even negative effects on employment.

### **6.3 Policy Recommendations**

Despite the evidence of moderate improvements in the economic growth of certain parts of the sub-Saharan region, unemployment is persistent and increasing in the region. Therefore, this study's core objective was to examine how government expenditure affects unemployment in the selected countries in sub-Saharan Africa. Grounded on the results of the study, some policy recommendations are put forward which when taken into consideration can aid in controlling this social menace, unemployment, which is stagnating economic development in the region.

In view of the policy relevance of the study, it is recommended that governments in the region accentuate more on capital investments and give preference to investments that will spark employment generation by shifting more resources to investment expenditures than consumption expenditure. Focusing on infrastructural investments such as the construction of roads, railways, schools, and hospitals can help improve the lives of people as well as create jobs. Such projects should be done without neglecting the rural



areas which most often lack such improvements, and this can go a long way to develop such areas in the economy.

Again, agricultural development should be a target of economies in the region. The government can initiate programs that will make agriculture enticing to people, especially the youth since youth unemployment is rampant in the region. Subsidies, good infrastructure, lower-priced agricultural materials, and available and ready markets for agriculture produce are initiatives that can be taken to improve the agriculture sector as well as entice the youth to engage in agricultural projects. This has a huge tendency to reducing the unemployment challenge in SSA countries since agriculture is a huge advantage in sub-Saharan Africa.

Moreover, the study suggests that a consistent enabling environment should be created in the countries in the region to attract investors both foreign and domestic. Basic amenities such as portable water and stable power is very crucial alongside internal security. Reduction in corporate taxes, as well as tax holidays, are strategies, the government can adopt to attract investors. Private or self-employment can also be harnessed and elevated through training programs and also financial institutions can play key roles by providing loans at reduced interest rates payable over a long-time duration to individuals who have feasible and sustainable projects. Foreign investments especially the Greenfield investments which are more market seeking and labor absorbing should be encouraged.

Further, due to its possible beneficial impact on employment creation, external debt funds should be managed appropriately and channeled to productive ventures. There was no statistical support of the relevance of external debt in the study and this could be adduced

to mismanagement of funds from external debt in the SSA region. Thus, to control and reduce unemployment, governments in the region should place the maximum effort in ensuring that such funds are put their right use. Although corruption was not discussed in the study, it is germane on the side of those in authority to put in place measures that will eradicate corruption since it is one crucial problem in Africa hampering the continent's development.

Finally, it is imperative for governments to enact policies that have the potential of diversifying the economy, most importantly the diversion from over-dependence on natural resources into other subsectors of the economies in the SSA region. This will go a long way in enormous job creation.

## REFERENCES

- Abubakar, A. B. (2016). Dynamic effects of fiscal policy on output and unemployment in Nigeria: an econometric investigation. *CBN Journal of Applied Statistics*, 7(2), 101-122.
- Adamu, P., Kaliappan, S. R., Bani, Y., & Nor, M. N. (2017). Impact of Globalization on Unemployment in Sub-Saharan African (SSA) Countries. *Governance and Sustainability of Global Business Economics*, 302-310.
- Adefeso, H. A. (2016). Productive Government Expenditure and Economic Performance in sub-Saharan Africa: An Empirical Investigation. *Zagreb International Review of Economics and Business*, 19(2), 1-18.
- Ahmed, E. M., & Hanif, C. M. (2018). Sub-Saharan African Countries Public Expenditure and Economic Growth: Wagner's Panel Cointegration and Causality Applications.
- Anayochukwu, O. B. (2012). Fiscal deficits and inflation in Nigeria: The causality approach. *International Journal of Scientific & Technology Research*, 1(8), 6-12
- Andrews, M. (2010). How far have public financial management reforms come in Africa?.
- Anyanwu, J. C. (2013), 'Characteristics and Macroeconomic Determinants of Youth Employment in Africa', *African Development Review*, Vol. 25, No. 2, pp. 107–29

- Arnold, J. M., & Javorcik, B. S. (2009). Gifted kids or pushy parents? Foreign direct investment and plant productivity in Indonesia. *Journal of International Economics*, 79(1), 42-53
- Auerbach, A. J. (1995). *Tax Projections and the Budget: Lessons from the 1980s* (No. w5009). National Bureau of Economic Research.
- Baker, F. (2007). The South African labor market: Theory and practice.
- Bassanini, A., & Duval, R. (2009). Unemployment, institutions, and reform complementarities: re-assessing the aggregate evidence for OECD countries. *Oxford Review of Economic Policy*, 25(1), 40–59.  
<https://doi.org/10.1093/oxrep/grp004>
- Baxter, M., & King, J. (1993). ‘Fiscal Policy in General Equilibrium’, *American Economic Review*, 83, pp. 315 – 34.
- Blanchard, O., & Quah, D. (1989). The dynamic effects of aggregate supply and demand shocks. *American Economic Review*, 79(4).
- Blanchard, O., & Perotti R., (2002). “An Empirical Characterization of the Dynamic Effects of Changes in Government Spending and Taxes on Output”, *Quarterly Journal of Economics* 117: 1329-1368
- Bova, E., Kolerus, C., & Tapsoba, S. J. (2015). A fiscal job? An analysis of fiscal policy and the labor market. *IZA Journal of Labor Policy*, 4(1), 13.
- Bruckner, M., & Pappa, E. (2012), Fiscal Expansions, Unemployment, and Labor Force Participation, *International Economic Review* 54, 1205–1228.

Central Bank of Nigeria (CBN) Annual Reports for Various Years, Nigeria.

<http://www.cenbank.org/Documents/annualreports.asp>

Coniglio, N. D., Prota, F., & Seric, A. (2015). Foreign Direct Investment, Employment, and Wages in Sub-Saharan Africa. *Journal of International Development*, 27(7), 1243-1266.

Canyon M.J, Girma S, Thompson S, & Wright P. (2002). The Productivity and Wage Effects of Foreign Acquisition in the United Kingdom. *Journal of Industrial Economics* 50(1): 85-102

Egbulonu, K. G., & Amadi, K. W. (2016). Effect of fiscal policy on unemployment in the Nigerian economy. *International Journal of Innovative Finance and Economics Research*, 4(3), 1-7.

Fatás, A., & Mihov, I. (2001). The effects of fiscal policy on consumption and employment: theory and evidence. CEPR Discussion 2760.

Folawewo, A. O., & Adeboje, O. M. (2017). Macroeconomic determinants of unemployment: empirical evidence from the economic community of West African states. *African Development Review*, 29(2), 197-210.

Galí, J., Smets, F., & Wouters, R. (2012). Unemployment in an Estimated New Keynesian model. *NBER macroeconomics annual*, 26(1), 329-360.

Girma S., & Görg H. (2007). Multinationals' Productivity Advantage: Scale or Technology? *Economic Inquiry* 45(2): 350-362.

- Hausman, J. A. (1978), 'Specification Tests in Econometrics', *Econometrica*, Vol. 46, No. 6, pp. 1251–71
- Herrin, A., & E. Pernia (2014), 'Population, Human Resource and Employment', in A. Balisacan and H. Hill (eds.), *The Philippine Economy: Development Policies and Challenges*, Ateneo University Press, Quezon City
- Herrin, A., & E. Pernia (2014), 'Population, Human Resource and Employment', in A. Balisacan and H. Hill (eds.), *The Philippine Economy: Development Policies and Challenges*, Ateneo University Press, Quezon City
- Holden, S., & Sparrman, V. (2016). Do Government Purchases Affect Unemployment? *The Scandinavian Journal of Economics*, 36. <https://doi.org/10.1111/sjoe.12214>
- Huidrom, R., Kose, M. A., & Ohnsorge, F. L. (2016). *Challenges of fiscal policy in emerging and developing economies*. The World Bank.
- Huidrom, R., Kose, M. A., & Ohnsorge, F. L. (2018). Challenges of Fiscal Policy in Emerging and Developing Economies. *Emerging Markets Finance and Trade*, 54(9), 1927–1945. <https://doi.org/10.1080/1540496X.2017.1328354>
- International Labor Organization Newsroom. (2016). Global unemployment projected to rise in both 2016 and 2017. Retrieved from [http://www.ilo.org/global/about-the-ilo/newsroom/news/WCMS\\_443500/lang--en/index.htm](http://www.ilo.org/global/about-the-ilo/newsroom/news/WCMS_443500/lang--en/index.htm)
- International Labour Organisation. (2018). *World Employment and Social Outlook: Trends 2018. Ilo*.
- Investopedia. (2017). Unemployment. Retrieved December 9, 2017, from

<https://www.investopedia.com/terms/u/unemployment.asp>

Jeppesen, S., & Mainguy C. (2007), 'Foreign Direct Investment in Africa: Searching for Impact in Mali and South Africa', CBDS Working Paper no. 6, Centre for Business and Development Studies, Denmark

Jude, C., & Silaghi M. (2015), 'Employment effects of Foreign Direct Investment: New Evidence from Central and Eastern European Countries', *International Economics*, Vol. 145, pp. 32–49

Magazzino, C. (2016). Fiscal variables and growth convergence in the ECOWAS. *African Journal of Economic and Management Studies*, 7(2), 147-163.

Mahdavi, S., & Alanis, E. (2013). Public expenditures and the unemployment rate in the American states: panel evidence. *Applied Economics*, 45(20), 2926-2937.

Matsumae, T., & Hasumi, R. (2016). *Impacts of Government Spending on Unemployment: Evidence from a Medium-scale DSGE Model* (No. 329). ESRI Discussion Paper Series.

Meier, G. M. (1995), *Leading Issues in Economic Development*, Oxford University Press, New York

Monacelli, T., Perotti, R., & Trigari, A. (2010). Unemployment fiscal multipliers. *Journal of Monetary Economics*, 57(5), 531-553.

Mouhammed, A. H. (2012). Important theories of unemployment and public policies. *The Journal of Applied Business and Economics*, 13(2), 156.

- Mountford, A., & Uhlig, H. (2009). What are the effects of fiscal policy shocks? *Journal of applied econometrics*, 24(6), 960-992.
- Mulas-Granados, C. A. R. L. O. S. (2004). Economics or Politics? A theoretical review of the determinants of fiscal policy. *Hacienda Publica Espanola, Monografia*.
- Murwirapachena, G., Choga, I., Maredza, A., & Mavetera, N. (2013). Fiscal Policy and Unemployment in South Africa: 1980 – 2010. *Mediterranean Journal of Social Sciences*, 10. <https://doi.org/10.5901/mjss.2013.v4n6p579>
- N'guessan, C.F. (2017). Threshold Effect of Government Consumption on Employment: Evidence from African Countries.
- Nwosa, P. I. (2014). Government Expenditure, Unemployment And Poverty Rates In Nigeria. *JORIND*, 12(1), 1596–8308. Retrieved from [www.transcampus.org/journals](http://www.transcampus.org/journals); OECD (2002), OECD Best Practices for Budget Transparency. OECD Journal on Budgeting, 1(3), pp. 7-14
- OECD (2013), "Government investment spending", in *Government at a Glance 2013*, OECD Publishing, Paris, [https://doi.org/10.1787/gov\\_glance-2013-23-en](https://doi.org/10.1787/gov_glance-2013-23-en).
- Ogbeide, F. I., Kanwanye H., & S. Kadiri (2016), 'Revisiting the Determinants of Unemployment in Nigeria: Do Resource Dependence and Financial Development Matter?', *African Development Review*, Vol. 28, No. 4, pp. 430–43.
- Ogundipe, A. A. (2013) Does Government Expenditure Spur Growth In ECOWAS? *Does Government Expenditure Spur Growth In ECOWAS?*
- Orji, A., Orji, O., Nchege, J., & Okafor, J. (2015). Manufacturing Output and Foreign



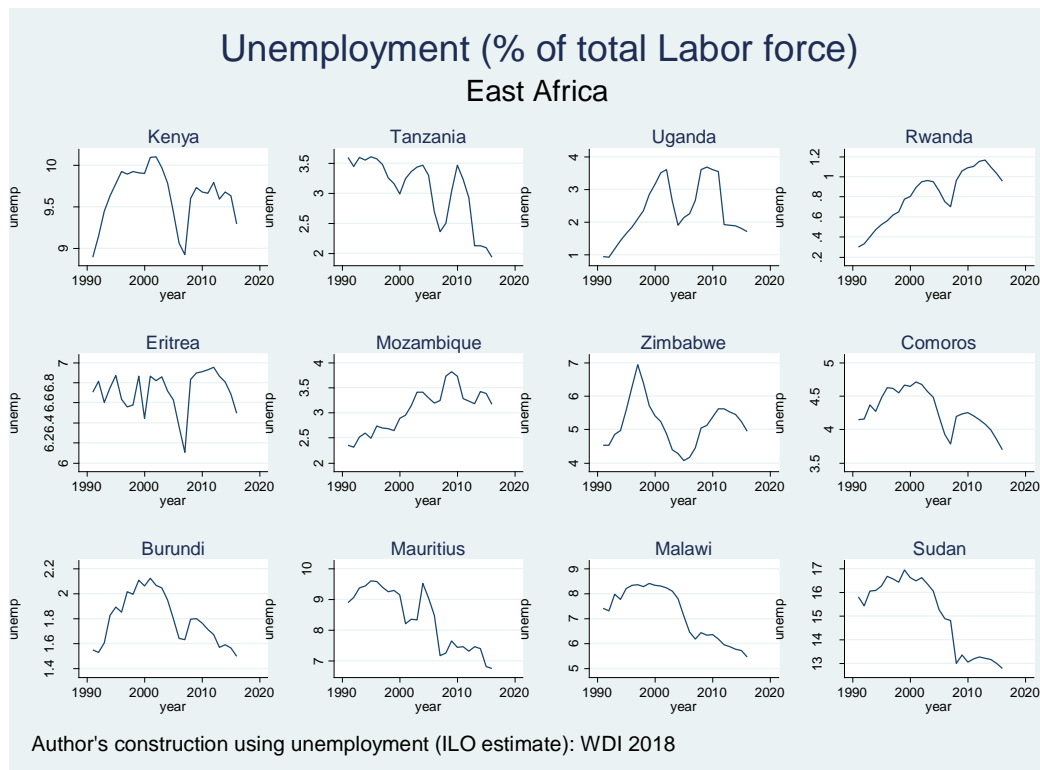
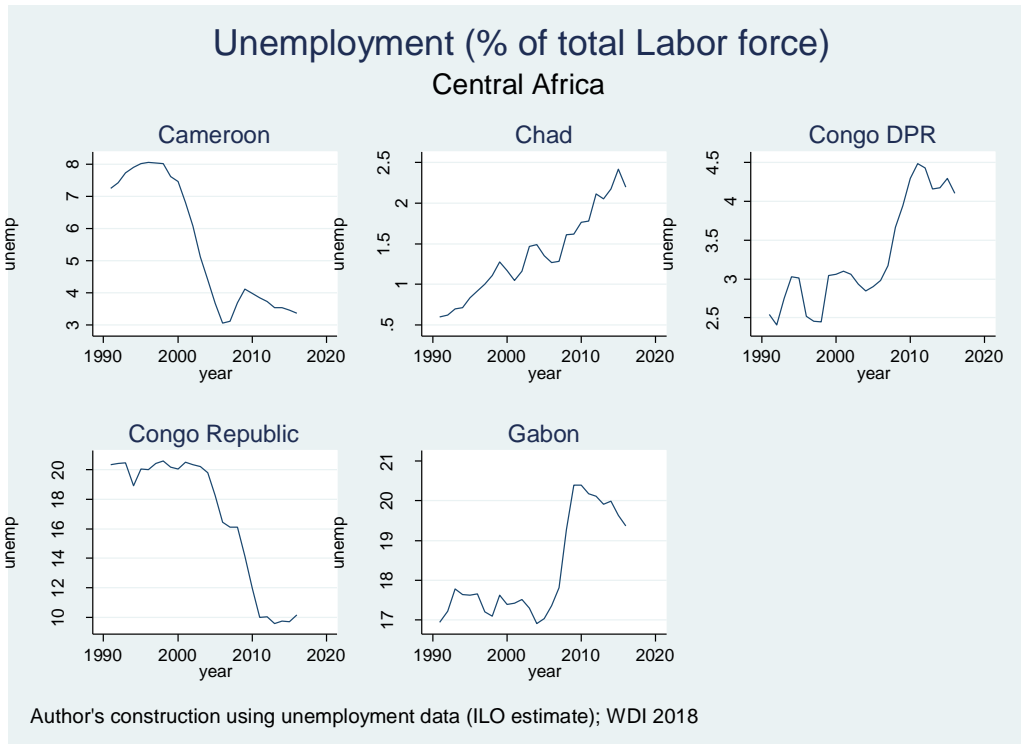
- Direct Investment in Nigeria : A New Evidence. *International Journal of Academic Research in Economics and Management Sciences*, 4(3), 16–28.
- <https://doi.org/10.6007/IJAREMS/v4-i3/2016>
- Pappa, E. (2009). The effects of fiscal shocks on employment and the real wage. *International Economic Review*, 50(1), 217-244.
- Pappa, E. (2011). Fiscal expansions, unemployment and labor force participation: theory and evidence.
- Park, H. M. (2011). Practical guides to panel data modeling: a step-by-step analysis using Stata. *Public Management and Policy Analysis Program, Graduate School of International Relations, International University of Japan*, 1-52.
- Peterson, S. B. (2010). Reforming Public Financial Management in Africa.
- Rehman, J., Iqbal, A., & Siddiqi, M. W. (2010). Cointegration-causality analysis between public expenditures and economic growth in Pakistan. *European Journal of Social Sciences*, 13(4), 556-565.
- Strat, V. A., Davidescu A., & M. A. Paul (2015), ‘FDI and Unemployment-A Causality Analysis for the Latest EU Members’ *Procedia Economics and Finance*, Vol. 23, pp. 635–43.
- Tagkalakis, A. O. (2013). The unemployment effects of fiscal policy: recent evidence from Greece. *IZA Journal of European Labor Studies*, 2(1), 11.
- <https://doi.org/10.1186/2193-9012-2-11>

- Tulsidharan, S. (2006). Government expenditure and economic growth in India. *Government Expenditure and Economic Growth in India (1960 to 2000)*, 20(1), 169-179.
- Ugwuanyi, U. B., & Ugwunta, O. D. (2017). fiscal policy and economic growth: An Examination of selected countries in Sub-Saharan Africa. *International Journal of Academic Research in Accounting, Finance and Management Sciences*, 7(1), 117-130.
- Unal, U. (2015). The Unemployment Effects of Fiscal Policy in the Netherlands.
- United Nations, Department of Economic and Social Affairs, Population Division (2019). World Population Prospects 2019: Highlights (ST/ESA/SER.A/423).
- Wang, S., & Abrams, B. A. (2011). The effect of government size on the steady-state unemployment rate: A dynamic perspective (No. 11-12).
- Wiktionary. (2016). classical unemployment - Wiktionary. Retrieved December 10, 2017, from [https://en.wiktionary.org/wiki/classical\\_unemployment](https://en.wiktionary.org/wiki/classical_unemployment)
- World Bank (2015), World Development Indicators, World Bank. Washington, DC, available at <http://data.worldbank.org/data-catalog/world-development-indicators>
- World Bank (2019), World Development Indicators, World Bank. Washington, DC, available at <http://data.worldbank.org/data-catalog/world-development-indicators>
- Yasin, M. (2011). Public spending and economic growth: an empirical investigation of Sub-Saharan Africa. *Southwestern Economic Review*, 30, 59-68.

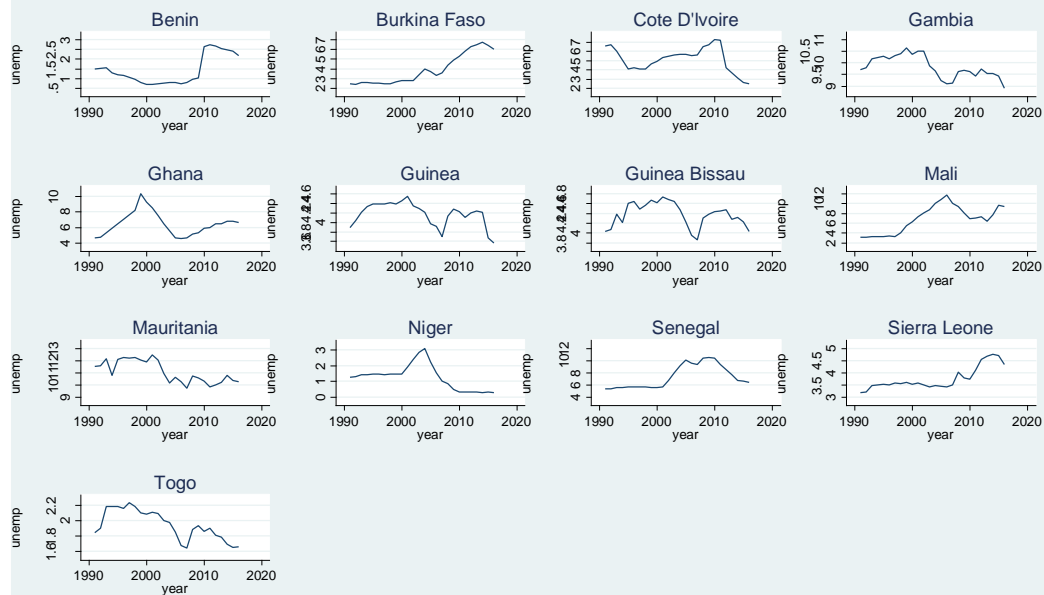
Zhang, T., & Zou, H. F. (1998). Fiscal decentralization, public spending, and economic growth in China. *Journal of public economics*, 67(2), 221-240.

## APPENDIX

### Appendix 1A

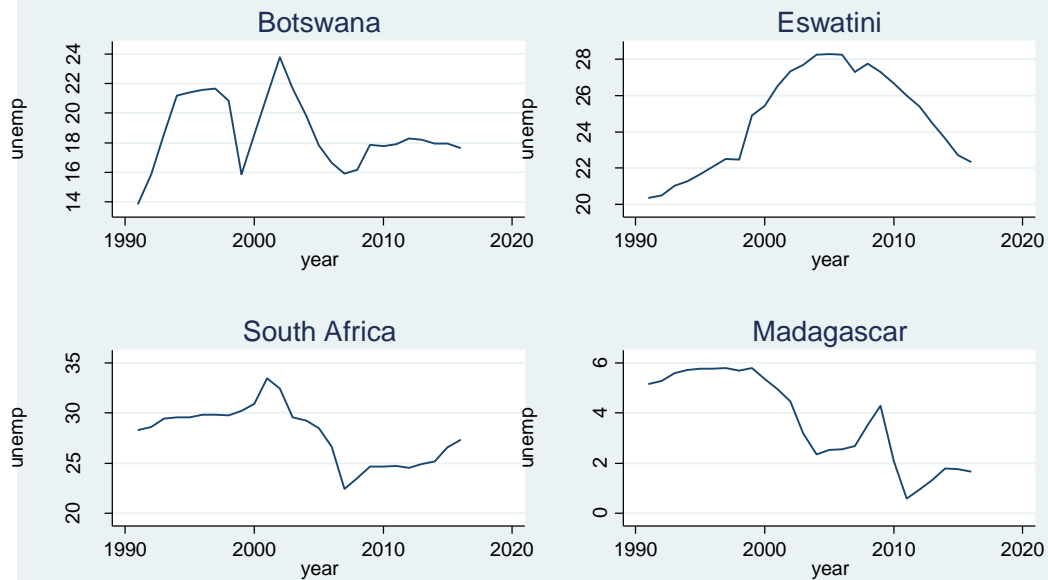


## Unemployment (% of total Labor force) West Africa



Author's construction using Unemployment data (ILOestimate): WDI 2018

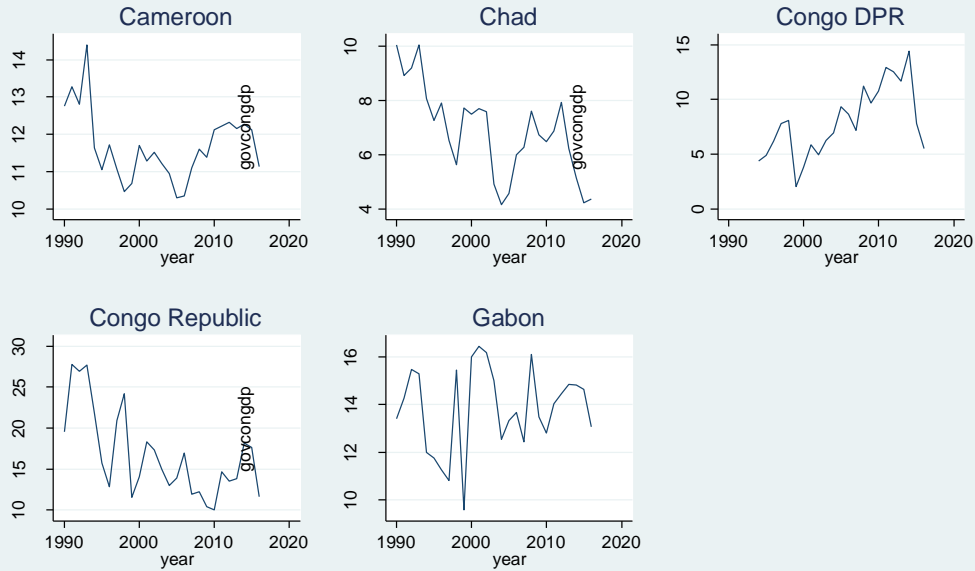
## Unemployment (% of total Labor force) Southern Africa



Author's construction with unemployment data (ILO estimate): WDI2018

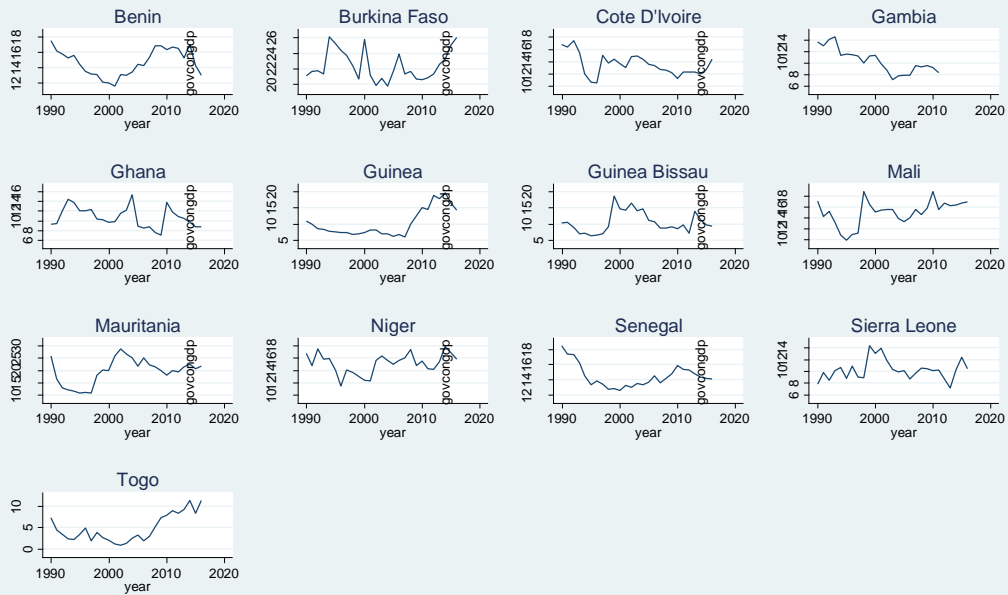
## Appendix 1B

### Government Consumption Expenditure (%GDP) Central Africa



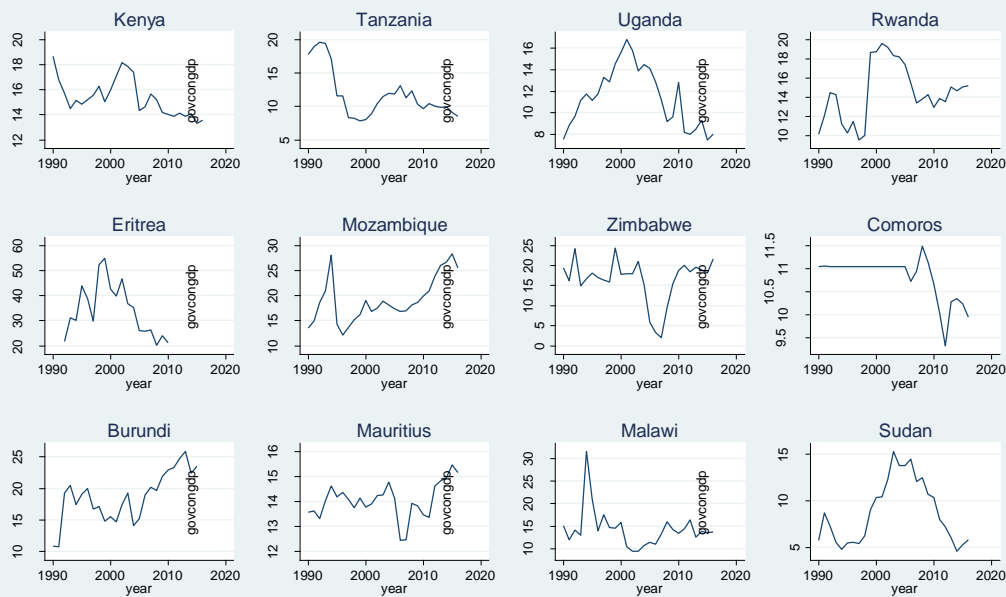
Author's construction using data from WDI 2018

### Government Consumption Expenditure (%GDP) West Africa



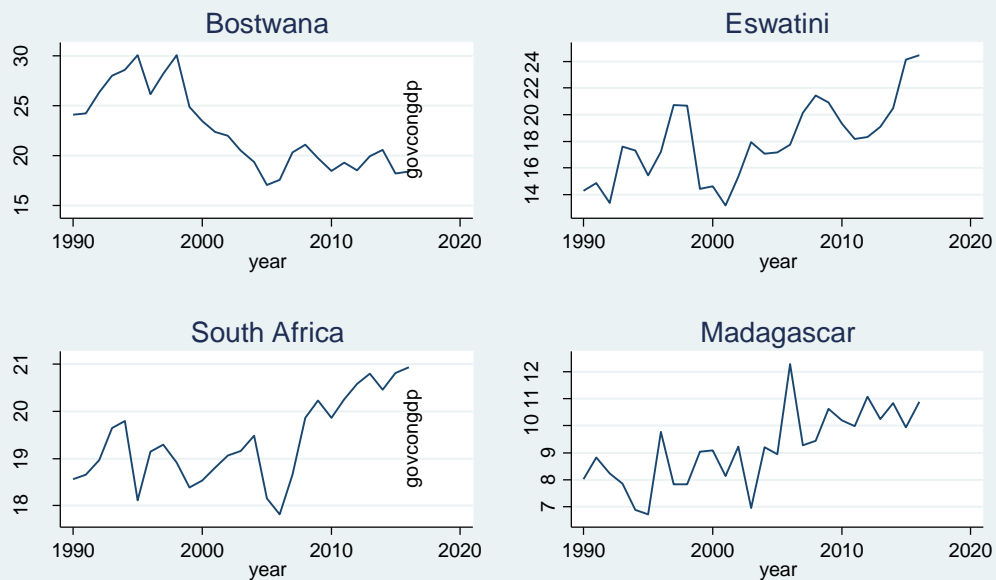
Author's construction with data from WDI 2018

## Government Consumption Expenditure (%GDP) East Africa



Author's construction using data from WDI 2018

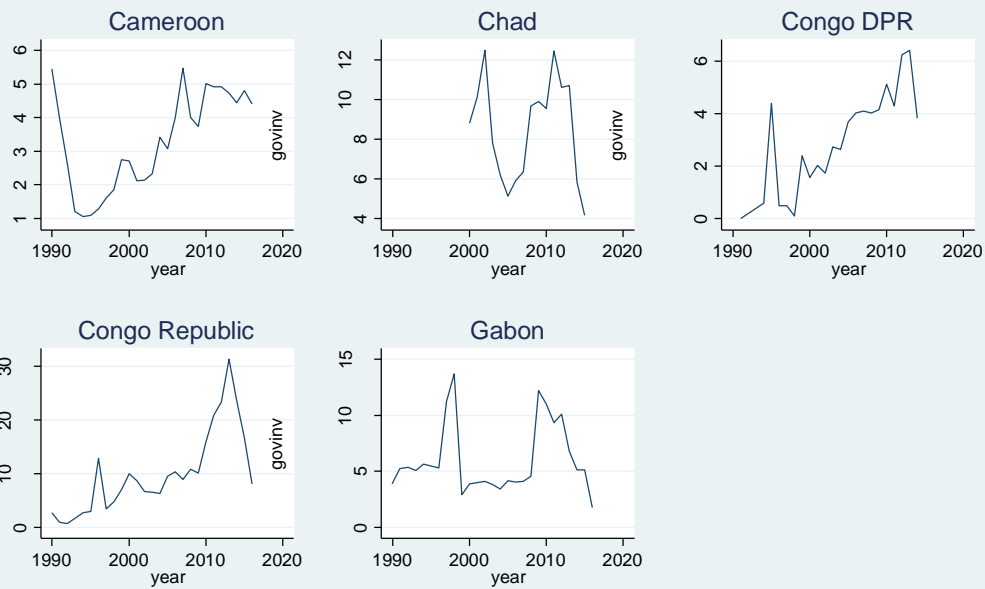
## Government Consumption Expenditure (%GDP) Southern Africa



Author's construction using data from WDI 2018

## Government Investment Expenditure (%GDP)

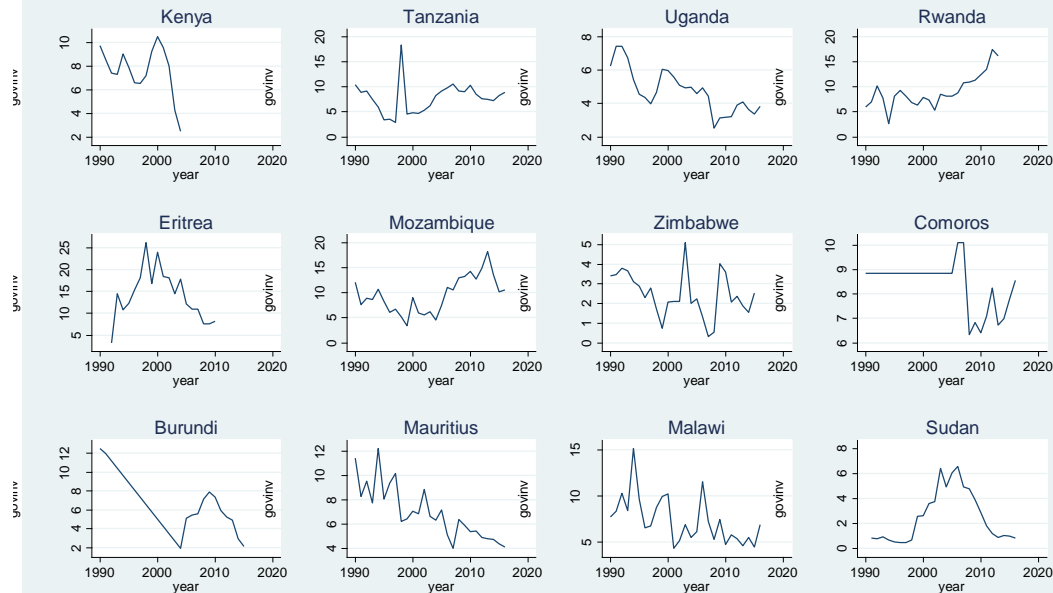
### Central Africa



Author's construction using data from WDI 2018

## Government Investment Expenditure (%GDP)

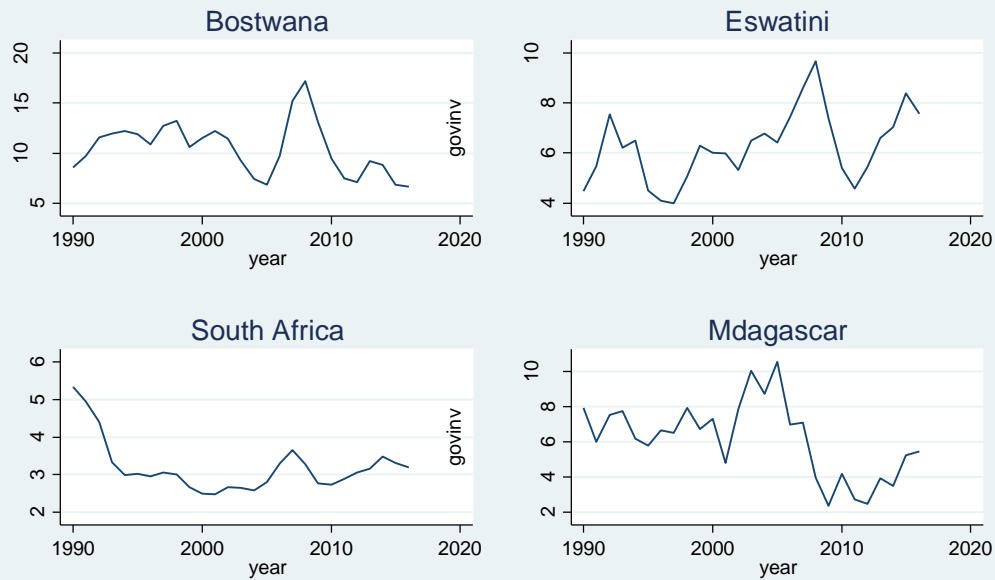
### East Africa



Author's computation with data from WDI 2018

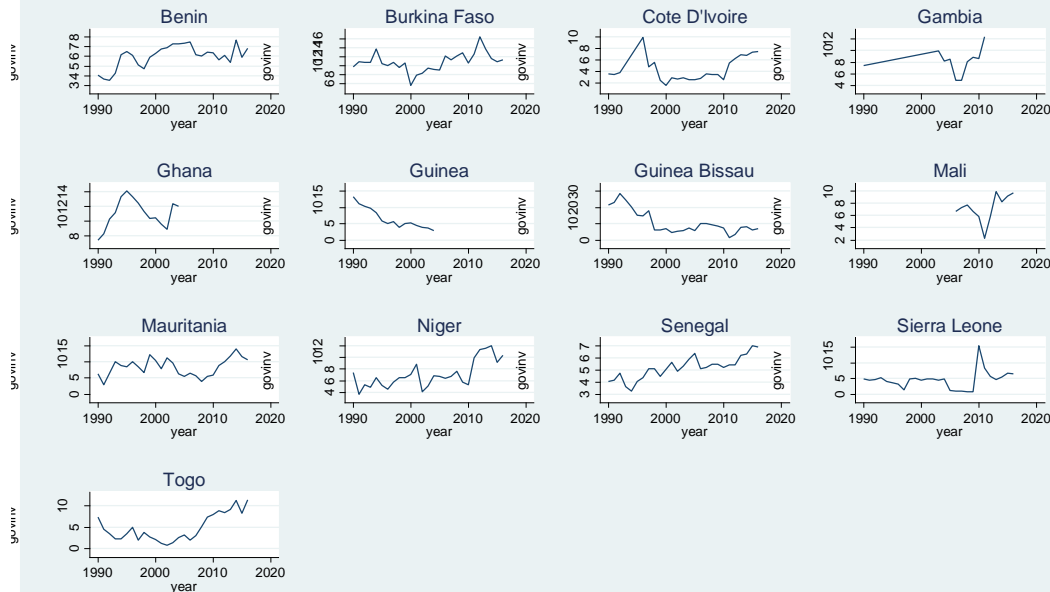


## Government Investment Expenditure (%GDP) Southern Africa



Author's construction using data from WDI 2018

## Government Investment Expenditure (%GDP) West Africa



Author's construction with Data computed from WDI 2018

## Appendix 1C

### List of Countries

SSA Countries used for the Study	SSA Countries used for the Study
Benin	Cameroon
Burkina Faso	Chad
Cote d'Ivoire	Congo D.R.
The Gambia	Congo
Guinea	Gabon
Guinea Bissau	Kenya
Ghana	Tanzania
Mali	Uganda
Mauritania	Eritrea
Niger	Mozambique
Senegal	Zimbabwe
Sierra Leone	Comoros
Togo	Burundi
Botswana	Mauritius
Eswatini	Malawi
South Africa	Sudan
Madagascar	Rwanda